

REPORT NUMBER: SideNCAPPole-MGA-23-032

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Side Impact Pole Test**

**HONDA DEVELOPMENT & MANUFACTURING OF AMERICA, LLC
2023 Honda Accord LX 4-Door Sedan
NHTSA No.: O20235310**

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



Test Date: July 28, 2023

Final Report Date: May 3, 2024

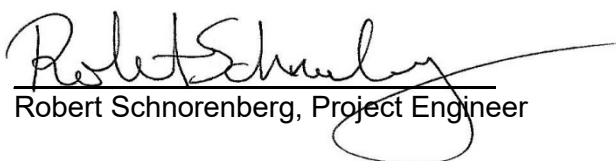
FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NRM-100
1200 New Jersey Ave, SE
Washington, DC 20590**

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Approval Date: May 3, 2024

FINAL REPORT ACCEPTANCE BY OCWS:

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

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

TECHNICAL REPORT DOCUMENTATION PAGE

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4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of a 2023 Honda Accord LX 4-Door Sedan NHTSA No.: O20235310				5. Report Date May 3, 2024																											
				6. Performing Organization Code MGA																											
7. Author(s) Ben Fischer, Program Manager				8. Performing Organization Report No. SideNCAPPole-MGA-23-032																											
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105				10. Work Unit No.																											
				11. Contract or Grant No. 693JJ920D000017																											
12. Sponsoring Agency Name and Address United States Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards Mail Code: NRM-100 1200 New Jersey Ave, SE Washington, DC 20590				13. Type of Report and Period Covered: Final Test Report July 28, 2023 to May 3, 2024																											
				14. Sponsoring Agency Code NRM-100																											
15. Supplementary Notes																															
16. Abstract A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2023 Honda Accord LX 4-Door Sedan in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the MGA Research Corporation facility in Burlington, Wisconsin on July 28, 2023. The impact velocity was 32.19 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.9°C. The test vehicle post-test maximum crush was 306 mm at level 3. The test vehicle's performance was as follows: <table border="1" data-bbox="175 1121 1443 1411"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD (SID-IIs)</th> </tr> <tr> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>146.791</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>38.642</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>3582.669</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>20.065</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>18.612</td> </tr> </tbody> </table> *Proposed IARV The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door(s) did not open during the side impact event.						Measurement Description	Units	Driver ATD (SID-IIs)		Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	146.791	Resultant Lower Spine Acceleration	g	82	38.642	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3582.669	Maximum Thoracic Rib Deflection	mm	38*	20.065	Maximum Abdomen Rib Deflection	mm	45*	18.612
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs			18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division 1200 New Jersey Ave, SE Washington, DC 20590																												
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SECTION 1 PURPOSE AND SUMMARY OF TEST

PURPOSE

This side pole impact test is part of the MY 2023 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. 693JJ920D000017. The purpose of this test is to generate comparative side impact performance in a 2023 Honda Accord LX 4-Door Sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated March 2020.

SUMMARY

A rigid pole side impact test was conducted on a 2023 Honda Accord LX 4-Door Sedan. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.19 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin on July 28, 2023. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure dated March 2020. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) dummy was instrumented accordingly:

- Primary and Redundant Head CG Triaxial Accelerometers
- Head Triaxial Angular Rate Sensors
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper Rib and Lower Rib Displacement Potentiometers
- Lower Spine (T12) Triaxial Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

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

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Units	Driver ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC36)		1000	146.791
Resultant Lower Spine Acceleration	g	82	38.642
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3582.669
Maximum Thoracic Rib Deflection	mm	38*	20.065
Maximum Abdomen Rib Deflection	mm	45*	18.612

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	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	Yes	Yes
Side Airbag (Other)				
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes		Yes	
Other:				

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

GENERAL COMMENTS

Left A-Post at Sill Y recorded no valid data after 30ms.

Left B-Post at Sill Y recorded no valid data after 10ms.

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

SECTION 2
OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	O20235310	Traction Control System (TCS)	Yes
Model Year	2023	Auto-Leveling System	No
Make	Honda	Automatic Door Locks (ADL)	Yes
Model	Accord 1.5T LX	Power Window Auto-Reverse	Yes
Body Style	4-Door Sedan	Other Optional Feature	No
VIN	1HGCV1F2XPA016703	Driver Front Airbag	Yes
Body Color	Platinum White Pearl	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	24 km / 15 mi	Driver Head/Torso Airbag	No
Engine Displacement (L)	1.5 L	Driver Torso Airbag	No
Type/No. Cylinders	Inline 4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Lateral	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	CVT	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	FWD	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	Yes
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	Yes
Power Seats	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	Yes
		Other Safety Restraint	N/A

Does owner's manual provide instruction to turn off automatic door locks?	Yes
---	-----

DATA FROM CERTIFICATION LABEL

Manufactured By	HONDA DEVELOPMENT & MANUFACTURING OF AMERICA, LLC	GVWR (kg)	1960
Date of Manufacture	03/'23	GAWR Front (kg)	1070
Vehicle Type	Passenger Car	GAWR Rear (kg)	950

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				385	(A)
DSC x 68 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				45	(A-B)

VEHICLE SEAT TYPE

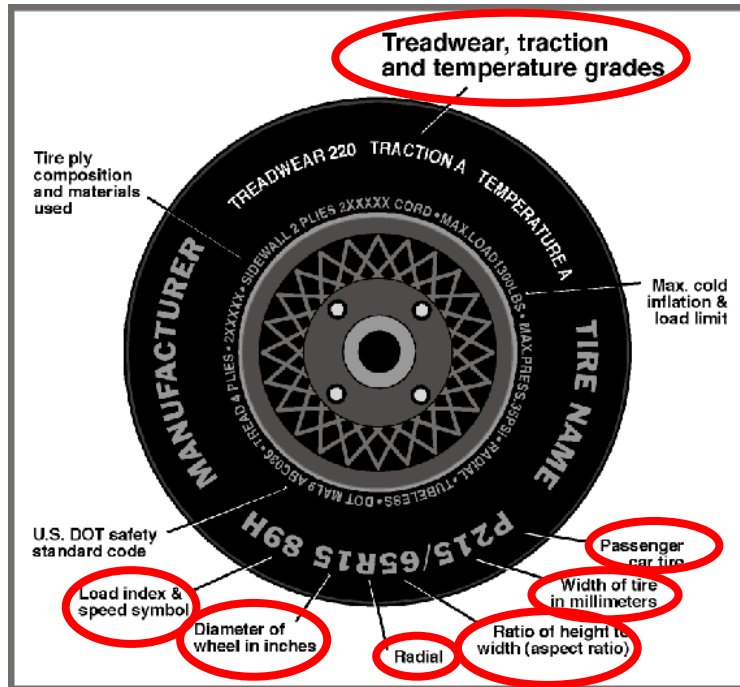
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	X					X	
Rear or Second Row				X	X		
Third Row Seat							

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

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	230	220
Recommended Tire Size	225/50R17	225/50R17
Tire Size on Vehicle	225/50R17	225/50R17
Tire Manufacturer	Hankook	Hankook
Tire Model	Kinergy GT	Kinergy GT
Treadwear	500	500
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	2 Steel, 1 Polyester, 1 Nylon	2 Steel, 1 Polyester, 1 Nylon
Load Index/Speed Symbol	94V	94V
Tire Material	Rubber	Rubber
DOT Safety Code Left	IT7AB IBHO 5122	IT7AB IBHO 5122
DOT Safety Code Right	IT7AB IBHO 5122	IT7AB IBHO 5122

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

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	230	230	235	230
Tire Placard	kPa	230	230	220	220
Owner's Manual	kPa	230	230	220	220
As Tested	kPa	230	230	220	220

TEST AXLE VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	440.0	304.0		465.0	336.5		453.5	349.5	
Right	kg	432.5	289.5		442.0	315.0		434.5	326.0	
Ratio	%	59.5%	40.5%		58.2%	41.8%		56.8%	43.2%	
Totals	kg	872.5	593.5	1466.0	907.0	651.5	1558.5	888.0	675.5	1563.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1466.0	(A)
Actual Weight of 1 P572 ATD (SID-IIs) Used	kg	52	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	45	(C)
Calculated Test Vehicle Target Weight (TVTW)	kg	1563.0	(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	As Delivered	As Tested	Fully Loaded	Meets Requirement
Driver Door Sill Angle (front-to-back)*	deg	-0.5	0.1	0.2	Yes
Front Pass. Door Sill Angle (front-to-back)*	deg	-0.7	-0.2	0.0	Yes
Front Bumper Angle (left-to-right)**	deg	0.0	0.2	0.2	Yes
Rear Bumper Angle (left-to-right)**	deg	0.3	0.4	0.4	Yes
Vehicle CG (Aft of Front Axle)	mm	1148	1185	1225	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	12	23	22	

* ND=Nose Down (-), NU=Nose Up (+) ** LD=Left Down (-), LU=Left Up (+)

*** The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements.

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Units	Weight
Weight of Ballast Added	kg	0
Components Removed: none	kg	

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: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023

TEST SURFACE MARKINGS

	Distance from 75° Impact Location Line (mm)
Fore 25 mm Target	918
Aft 25 mm Target	920

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

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023

SEAT POSITIONING

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, 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	24.6	18.3	21.5
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 SCR Height (mm)	SCR Height Position	SCR Height (mm)		
				Rear-Most	Mid	Forward-Most
Driver Seat	21.5	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: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

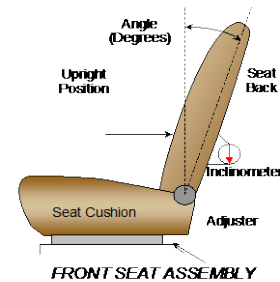
NHTSA No.: O20235310
 Test Date: 7/28/2023

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-Most Position	
	mm	Detents (1 st as 1)	mm	Detent (1 st as 0)
Driver Seat	240	25	0	0
Front Passenger Seat	210	22	0	0
Front Center Seat				
Struck Side Rear Seat	Fixed		Fixed	
Non-Struck Side Rear Seat	Fixed		Fixed	
Rear Center Seat	Fixed		Fixed	

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on S1 – Vehicle Setup Information for the 5th percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents (1 st as 1)	Degrees	Detent (1 st as 0)
Driver Seat	64.3	32	-6.0	1
Front Passenger Seat	66.7	35	-5.2	2
Front Center Seat				
Struck Side Rear Seat	Fixed		Fixed	
Non-Struck Side Rear Seat	Fixed		Fixed	
Rear Center Seat	Fixed		Fixed	

All seat back angles measured on outboard headrest post.

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on S1 – Vehicle Setup Information.

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

HEAD RESTRAINT ADJUSTMENT

Head restraints are adjusted to the lowest and most full forward in-use position.

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

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

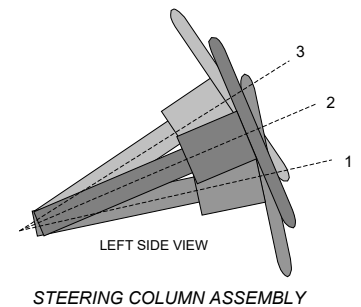
Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023

STEERING COLUMN ADJUSTMENT

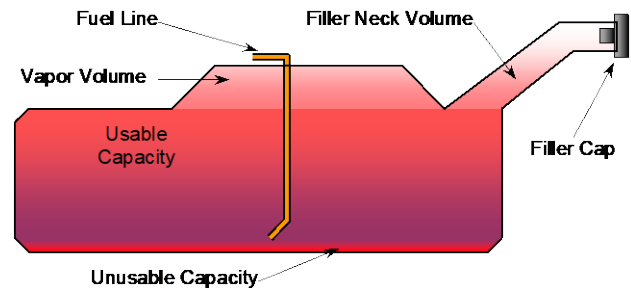
Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

	Wheel Angle (°)	Fore/Aft Position (mm)
Lowermost, Position 1	72.4	
Geometric Center, Position 2	69.5	
Uppermost, Position 3	66.6	
Telescoping Steering Wheel Travel		40
Test Position	69.5	20



FUEL PUMP

The vehicle is equipped with an electronic fuel pump. The pump will be filled for two seconds, and then the pressure is maintained. The filler neck is located on the driver's side.



VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY DATA

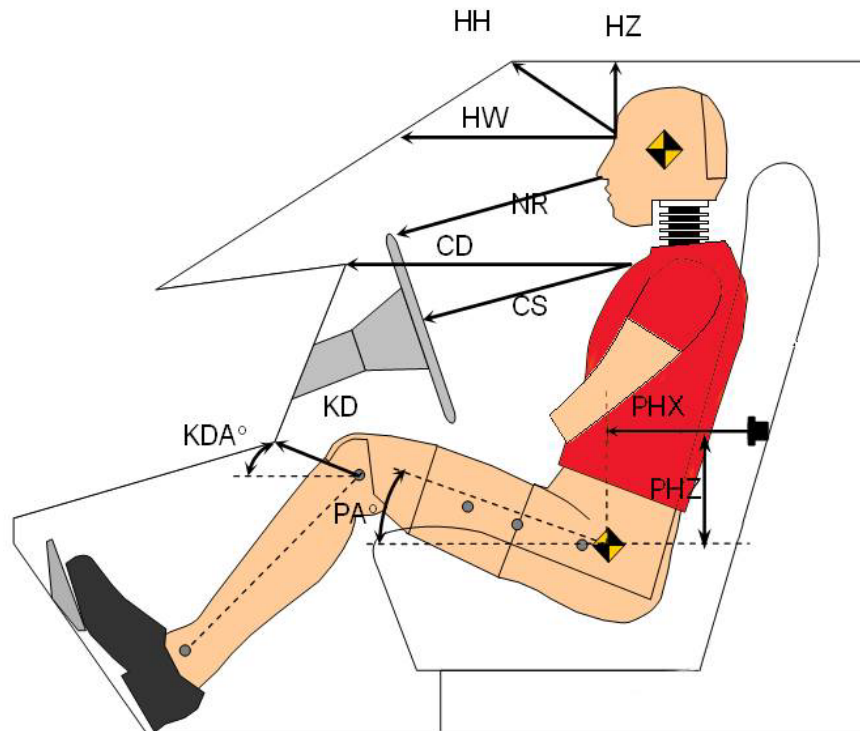
	Liters
Usable Capacity of Standard Tank (see S1 – Vehicle Setup Information)	56.0
Usable Capacity of Optional Tank (see S1 – Vehicle Setup Information)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	56.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	52.1
Actual Amount of Solvent Used	52.1
1/3 of Usable Capacity	18.7

Is the actual amount of solvent used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in S1 – Vehicle Setup Information? **YES**

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023



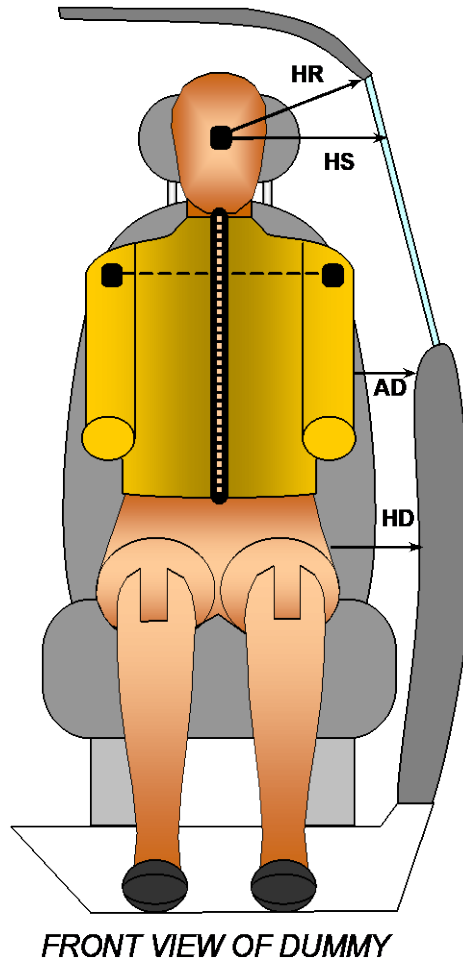
LEFT SIDE VIEW

Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	254	
HW	Head to Windshield	575	
HZ	Head to Roof Liner	189	
NR	Nose to Rim/Seat Back	218	
CD	Chest to Dashboard/Seat Back	411	
CS	Chest to Steering Wheel	161	
KDL / KDAL	Left Knee to Dash/Seat Back	168	53.7
KDR / KDAL	Right Knee to Dash/Seat Back	167	53.8
PAX	Pelvic Tilt Angle X		19.3
PAY	Pelvic Tilt Angle Y		0.0
PHX	Hip Point to Striker (X-Axis)	393	
PHZ	Hip Point to Striker (Z-Axis)	276	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023



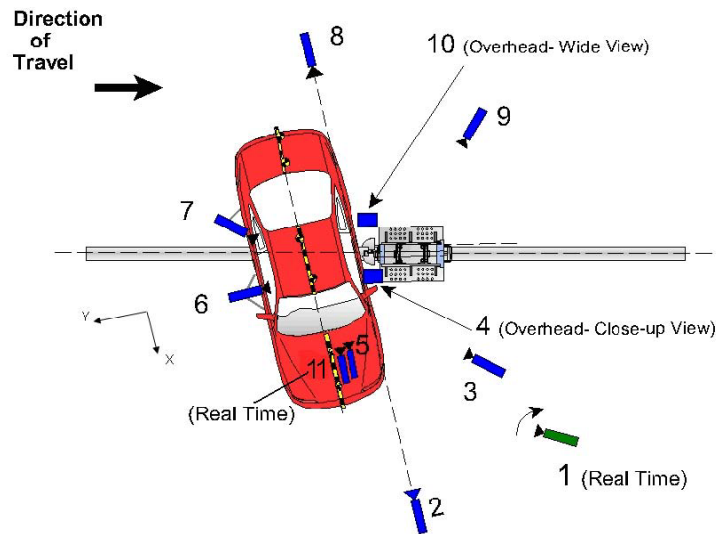
FRONT VIEW OF DUMMY

Code	Measurement Description	Driver
		Length (mm)
HR	Head to Side Header	288
HS	Head to Side Window	370
AD	Arm to Door	188
HD	Hip Point to Door	174

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023



Reference: (from Point of Impact for X and Y; from Ground for Z):
+X = Forward of Impact, + Y = Right of Impact, +Z = Down

No.	Camera View	Coordinates* (mm)			Lens (mm)	Frame Rate (fps)
		X	Y	Z		
1	Real-Time Pan View					30
2	Front Ground Level	6140	-15	-1250	24	1000
3	Impact Side 45° Forward	3995	-1855	-1280	12	1000
4	Overhead Closeup	0	0	-6670	85	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	-6940	-70	-1390	24	1000
9	Impact Side 45° Rearward	-2410	-3755	-1390	12	1000
10	Overhead Wide View	-20	705	-6650	12	1000
11	Real-Time Dummy Front View					30

*All measurements accurate to ± 6 mm

Note: Vehicle was positioned at a 75° angle to the rigid pole.

Explain why camera(s) did not operate as intended: None

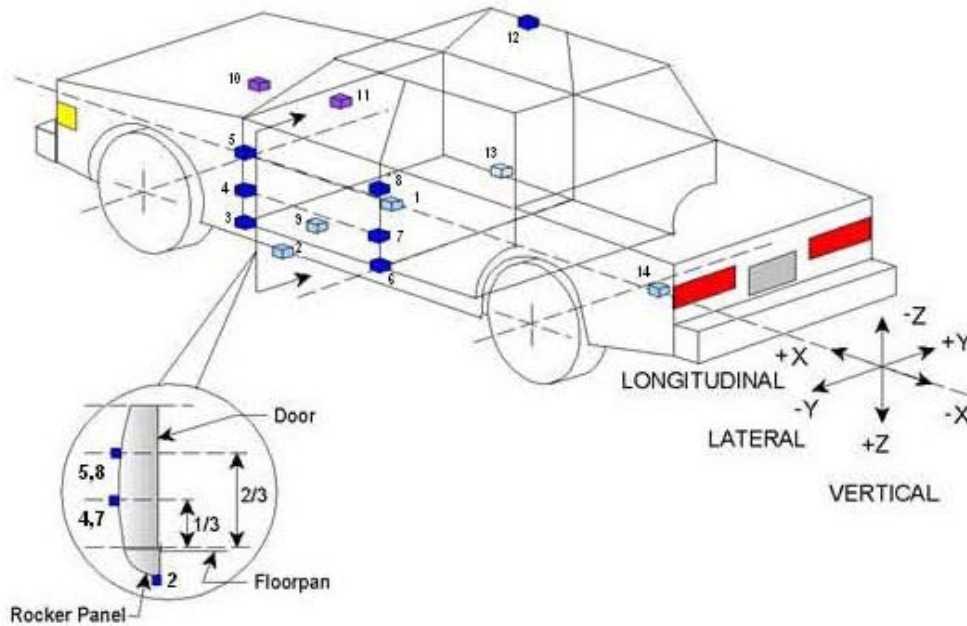
INSTRUMENTATION

	Number of Channels
Driver Dummy	21
Vehicle Structure	18
Pole Load Cells	8
Total	47

DATA SHEET NO. 6 TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023



TEST VEHICLE ACCELEROMETER LOCATIONS

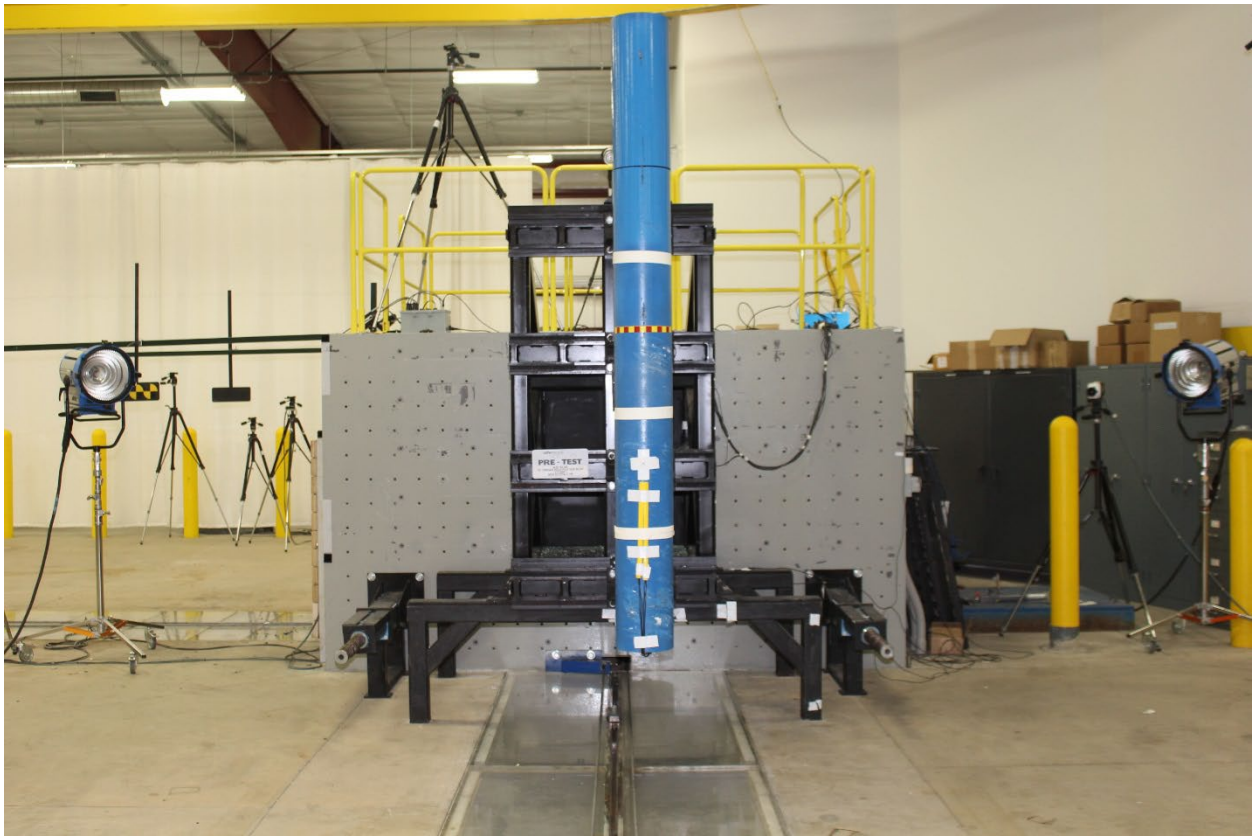
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2748	0	-192
2	Left Floor Sill	3318	-771	-186
3	A Pillar Sill	3487	-771	-186
4	A Pillar Low	3388	-855	-552
5	A Pillar Mid	3388	-850	-741
6	B Pillar Sill	2287	-771	-16
7	B Pillar Low	2207	-740	-265
8	B Pillar Mid	2207	-748	-465
9	Driver Seat Track	2449	-390	-194
10	Engine Top	4194	35	-769
11	Firewall	3798	0	-811
12	Right Roof	2274	522	-1436
13	Right Floor Sill	3318	771	-192
14	Rear Floorpan	1117	0	-487

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

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023



254 mm Diameter Rigid Pole

Load Cell Locations	
ID	Height from Impact Surface (mm)
1	182
2	470
3	698
4	986
5	1212
6	1641
7	1854
8	2053

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver Dummy (SID-IIs)
Face	Curtain Airbag, Side Torso/Pelvis Airbag
Top of Head	Curtain Airbag, Headrest
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Side Torso/Pelvis Airbag, Seatback
Upper Torso	Seatback
Lower Torso	Side Torso/Pelvis Airbag, Seatback
Left Hip	Side Torso/Pelvis Airbag, Seat Cushion
Left Knee	Door Panel

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	
Disengaged from Latched Position	No	No	No	No	
Latch Separated from Striker	No	No	No	No	
Jammed Shut	Yes	Yes	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	No Separation
Windshield Damage	Cracked
Side Window Damage	LF window broken
Other Notable Effects	None

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

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side		Struck Side	
	Driver		Left 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	Yes	Yes
Side Airbag (Other)				
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes		Yes	
Other:				

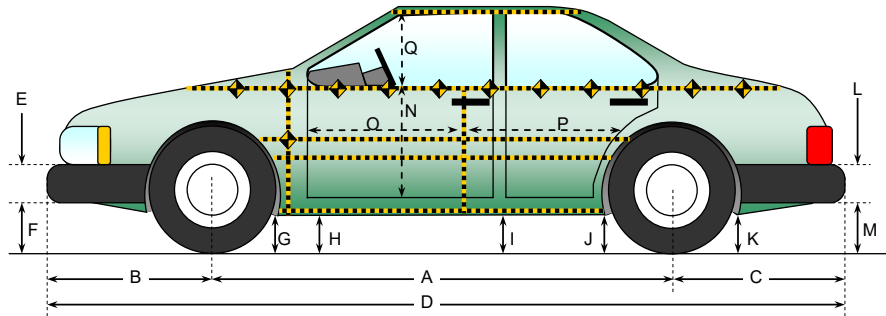
SPEED, ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1120
Actual Impact Point (Aft of Front Axle)	mm		1123
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	-3
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	degrees	75 +/- 3	75.1
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.19
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.21

DATA SHEET NO. 9
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
Test Date: 7/28/2023



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

LEFT SIDE VIEW

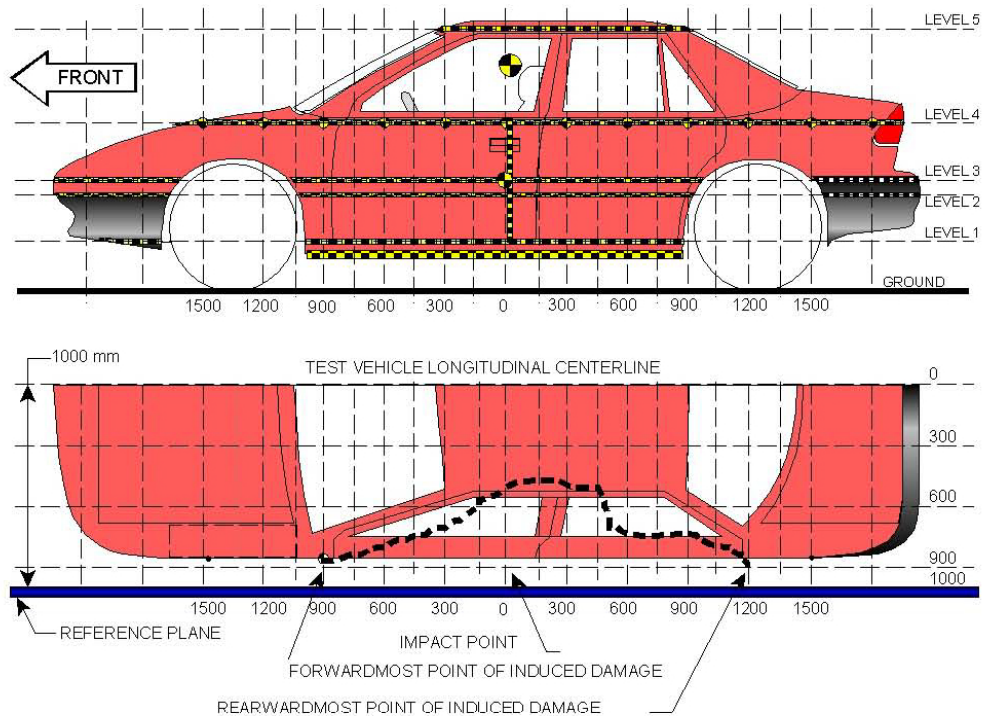
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Change
A	Wheelbase	2835	2800	-35
B	Front Axle to FSOV	1017	1037	20
C	Rear Axle to RSOV	1117	1116	-1
D	Total Vehicle Length at Centerline	4969	4953	-16
E	Front Bumper Thickness	113	113	0
F	Front Bumper Bottom to Ground	215	227	12
G	Sill Height at Front Wheel Well	167	172	5
H	Sill Height at Front Door Leading Edge	156	162	6
I	Sill Height at B-Pillar	170	181	11
J1	Sill Height at Rear Wheel Well	191	189	-2
J2	Pinch Weld Height at Rear Wheel Well	163	173	10
K	Sill Height Aft of Rear Wheel Well	225	228	3
L	Rear Bumper Thickness	93	93	0
M	Rear Bumper Bottom to Ground	298	287	-11
N	Sill Height to Bottom of Front Window Sill	737	735	-2
O	Front Door Leading Edge to Impact CL	656	560	-96
P	Rear Door Trailing Edge to Impact CL	1394	1334	-60
Q	Front Window Opening	363	315	-48
R	Right Side Length	4209	4220	11
S	Left Side Length	4209	4165	-44
T	Vehicle Width at B-Pillars	1864	1864	0
U	Front Wheel Track Width	1593		
V	Rear Wheel Track Width	1608		

DATA SHEET NO. 10 **TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023



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

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	304	280	0
2	Occupant H-Point	490	297	0
3	Mid Door	621	304	75
4	Window Sill	928	259	0
5	Window Top	1380	53	150

DATA SHEET NO. 10 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023

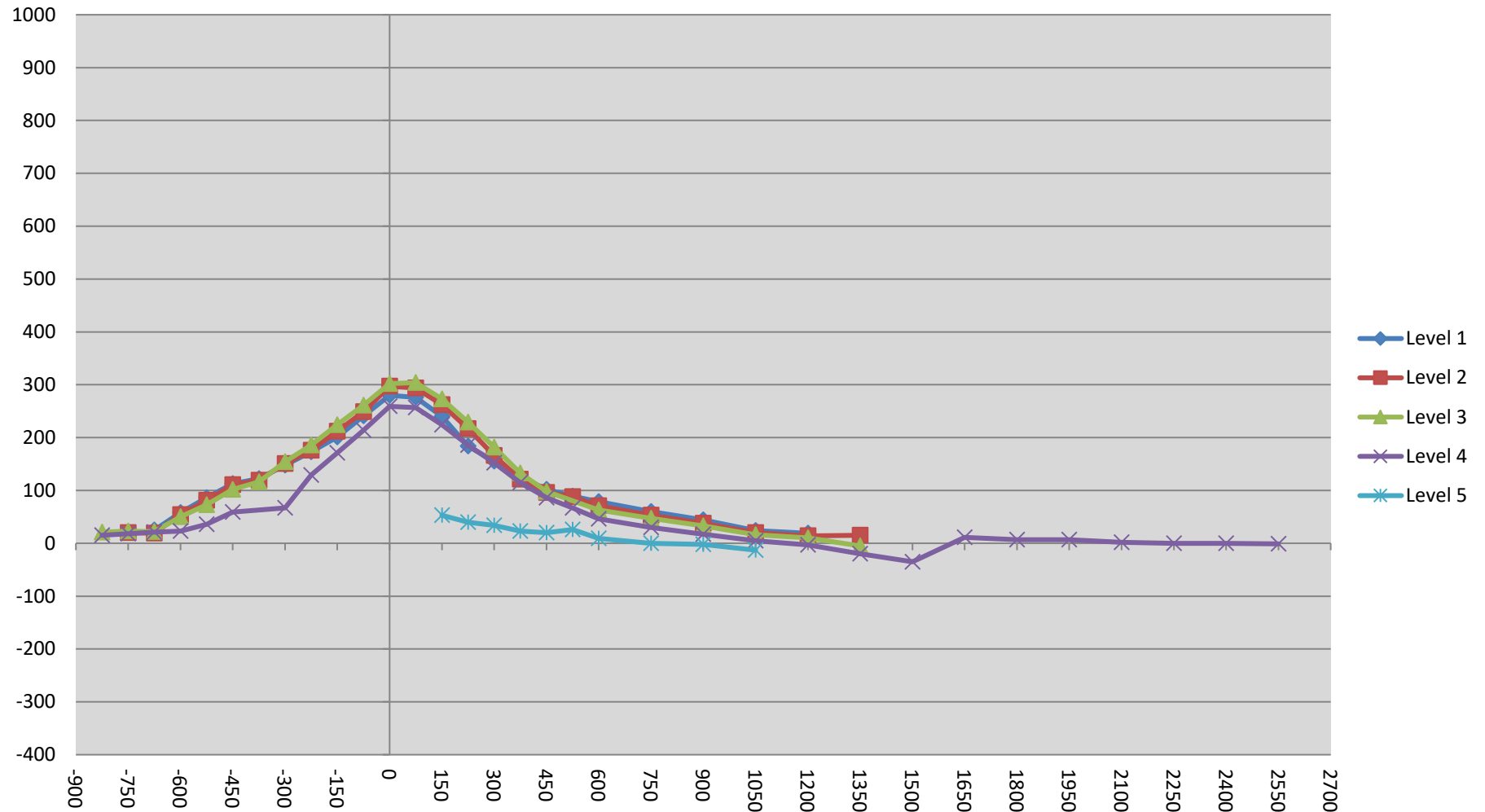
Pre-test measurements are taken when the vehicle is in the “As Tested” weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point.

	Pre-Test					Post-Test					Exterior Crush				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-2700															
-2550															
-2400															
-2250															
-2100															
-1950															
-1800															
-1650															
-1500															
-1350															
-1200															
-1050															
-900															
-825			167	300				188	315				21	15	
-750		172	171	295			192	194	313			20	23	18	
-675	186	175	174	287		211	194	196	308		25	19	22	21	
-600	188	187	177	279		246	241	227	302		58	54	50	23	
-525	189	180	178	274		275	261	251	310		86	81	73	36	
-450	189	181	179	268		302	292	281	327		113	111	102	59	
-375	189	182	180			311	301	296			122	119	116		
-300	190	182	180	280		338	333	334	347		148	151	154	67	
-225	190	182	180	251		363	358	366	380		173	176	186	129	
-150	191	183	180	245		392	395	404	416		201	212	224	171	
-75	190	183	180	240		431	432	441	454		241	249	261	214	
0	193	183	180	233		473	480	482	492		280	297	302	259	
75	193	183	179	230		469	477	483	487		276	294	304	257	
150	193	183	179	226	511	433	445	452	450	564	240	262	273	224	53
225	194	183	179	223	503	378	400	408	409	543	184	217	229	186	40
300	192	183	179	219	495	347	349	361	371	529	155	166	182	152	34
375	193	184	179	218	494	319	305	312	333	517	126	121	133	115	23
450	193	184	179	214	490	295	280	277	300	510	102	96	98	86	20
525	193	185		213	488	282	273		280	514	89	88		67	26
600	193	186	182	214	488	272	257	245	260	497	79	71	63	46	9
675															
750	194	186	182	215	494	254	239	229	245	494	60	53	47	30	0
825															
900	194	185	182	218	503	238	223	215	235	501	44	38	33	17	-2
1050	194	185	182	220	523	218	205	198	225	510	24	20	16	5	-13
1200	190	177	178	224		209	191	188	221		19	14	10	-3	
1350		170	170	229			185	165	209			15	-5	-20	
1500				235					200					-35	
1650				242					253					11	
1800				254					261					7	
1950				265					272					7	
2100				280					282					2	
2250				298					298					0	
2400				320					320					0	
2550				359					358					-1	
2700															

DATA SHEET NO. 10 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
Test Program: NCAP Side Pole Impact Test

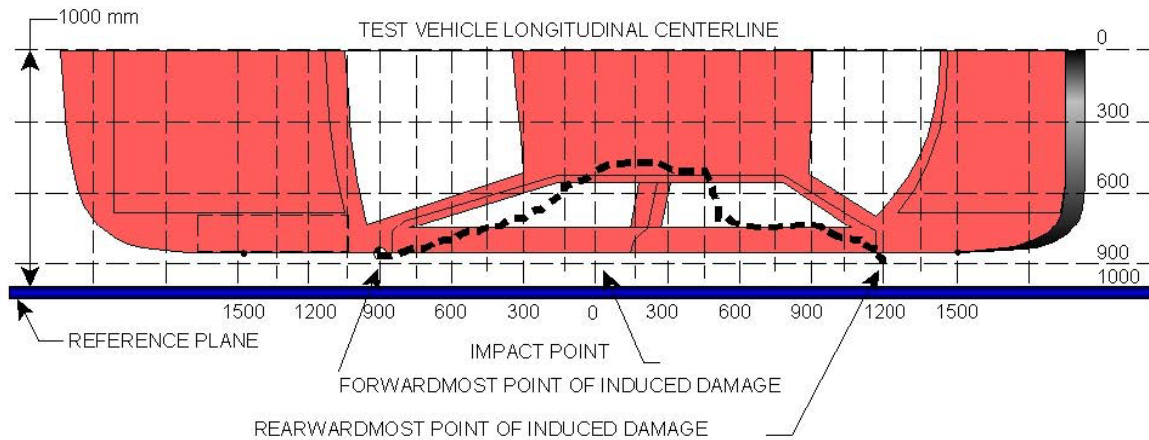
NHTSA No.: O20235310
Test Date: 7/28/2023



DATA SHEET NO. 10 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	575	3	179	248	69
2	320	3	179	348	169
3	65	3	179	485	306
4	-190	3	180	384	204
5	-445	3	179	265	86
6	-700	3	173	182	9

DATA SHEET NO. 11
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

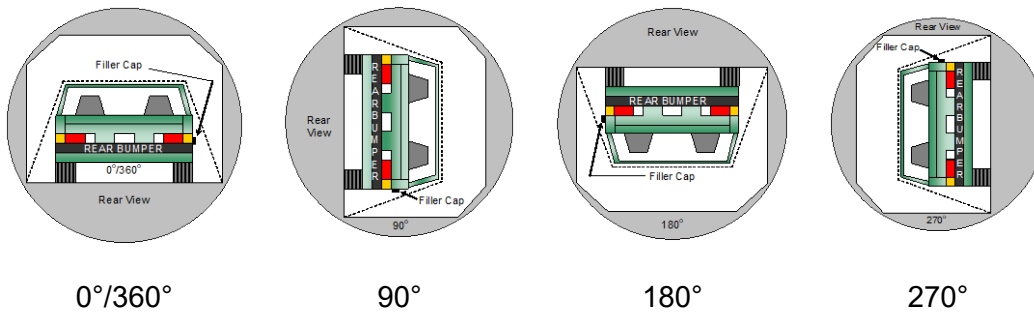
NHTSA No.: O20235310
 Test Date: 7/28/2023

Test Time: 11:20 am

Temperature: 21.9°C

- A. From impact until vehicle motion ceases: (Maximum Allowable = 1 ounce) 0.0 oz.
 B. For the 5 minute period after motion ceases: (Maximum Allowable = 5 ounces) 0.0 oz.
 C. For the following 25 minutes: (Maximum Allowable = 1 ounce / minute) None
 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°	97	300	397
90° to 180°	91	300	391
180° to 270°	80	300	380
270° to 360°	86	300	386

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	

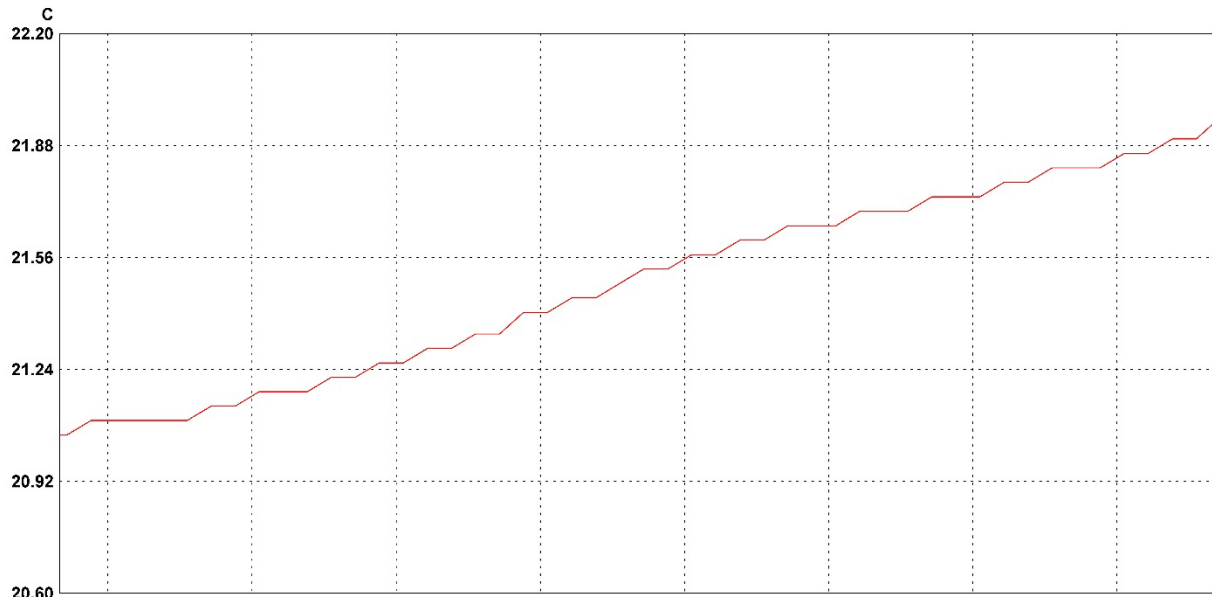
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 12 **DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA**

Test Vehicle: 2023 Honda Accord LX 4-Door Sedan
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: O20235310
 Test Date: 7/28/2023



7/28/2023 7:20:00 AM 7/28/2023 8:00:00 AM 7/28/2023 8:30:00 AM 7/28/2023 9:00:00 AM 7/28/2023 9:30:00 AM 7/28/2023 10:00:00 AM 7/28/2023 10:30:00 AM 7/28/2023 11:20:00 AM
 30 minutes/div 4 hours (M/d/yyyy h:mm:ss tt) Central Time Graph file (truncated): O20235310 2023 Honda Accord LX 4-Door Sedan Side NCAP Pole

LN	Serial #	Description	CH	Value	Maximum	Average	Minimum	Units	CH description	Logger file
1	18352041	VSC_South_Hall	1		21.90	21.48	21.05	C	Temperature	18352041_VSC_South_Hall.spl

APPENDIX A
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 Rear Three-Quarter View of Test Vehicle



Photo No. 010 - Post-Test Left Rear Three-Quarter 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

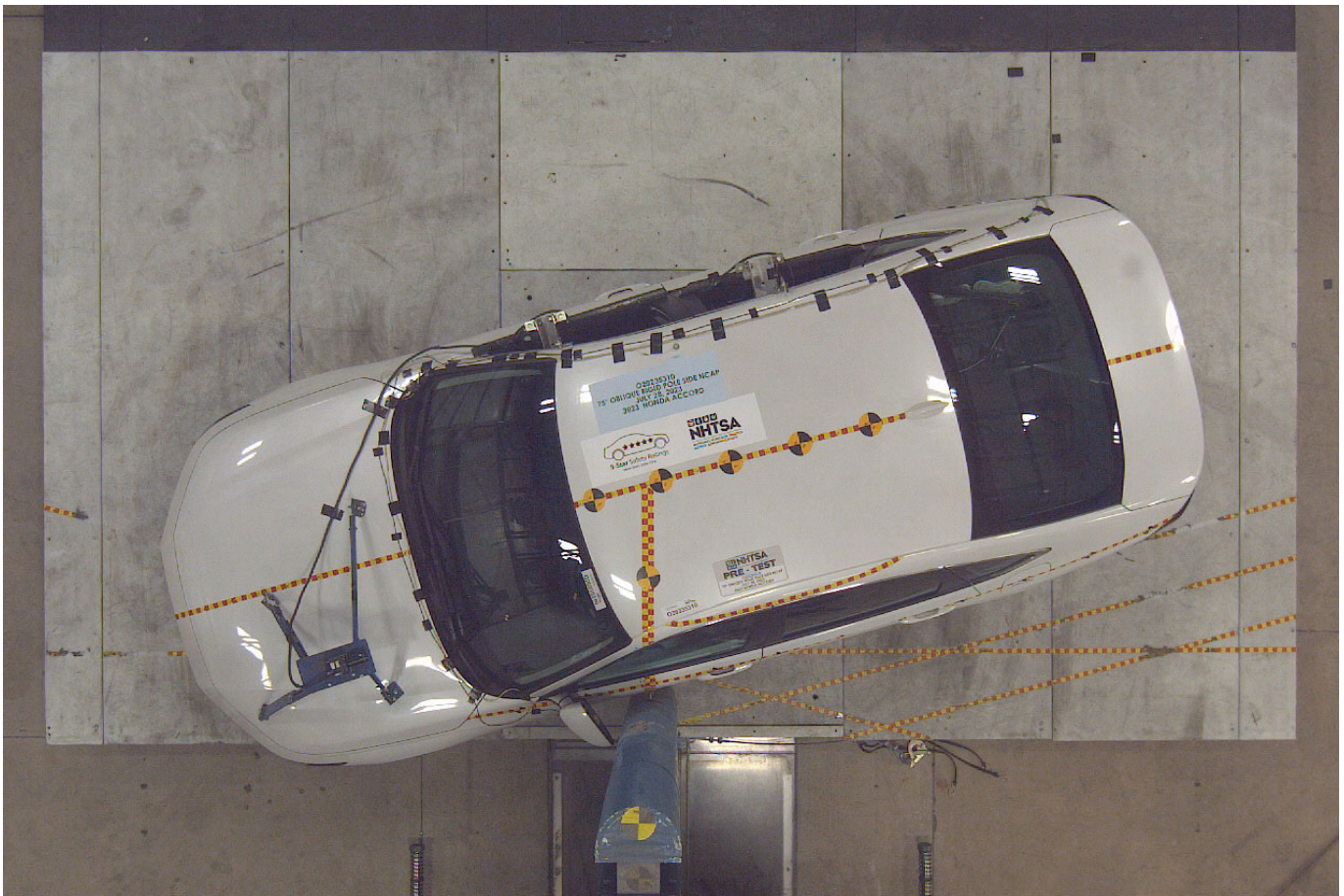


Photo No. 015 - Pre-Test Overhead View of Test Area

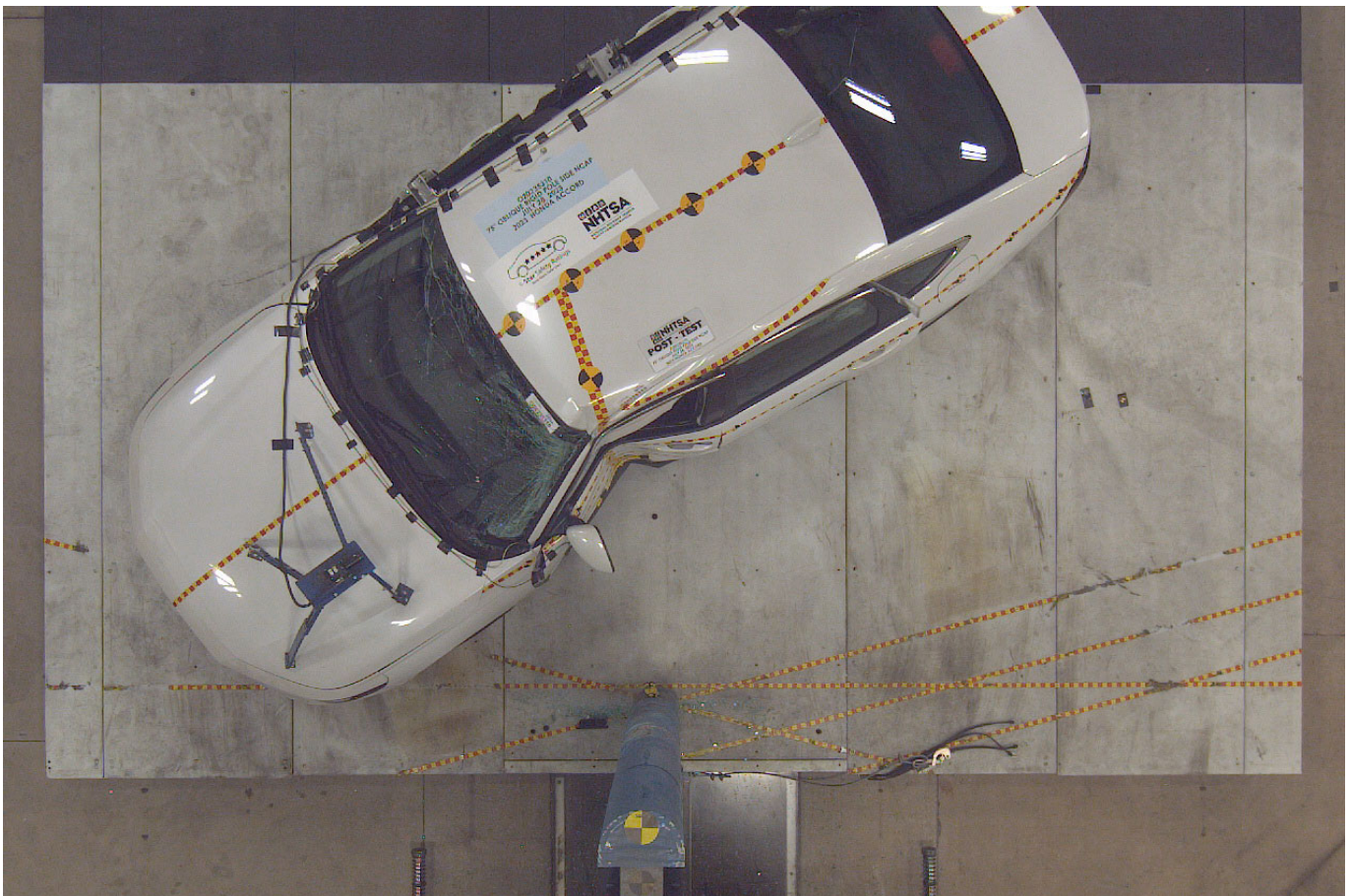


Photo No. 016 - Post-Test Overhead View of Test Area



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

PHOTOGRAPH NOT AVAILABLE

Photo No. 018 - Pre-Test Right Side View of Pole Positioned Against Side of 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 Showing Impact Location



Photo No. 021 - Pre-Test Front Close-Up View of Dummy Head and Chest



Photo No. 022 - Post-Test Front Close-Up View of Dummy



Photo No. 023 - Pre-Test Left Side View of Dummy Showing Belt and Chalking



Photo No. 024 - Pre-Test Left Side View of Dummy Shoulder and Door Top View



Photo No. 025 - Post-Test Left Side View of Dummy Shoulder and Door Top View



Photo No. 026 - Pre-Test Front View of Seat Back Prior to Dummy Positioning



Photo No. 027 - Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



Photo No. 028 - Pre-Test Front View of Seat Pan Prior to Dummy Positioning



Photo No. 029 - Pre-Test Overhead View of Dummy Thighs on Seat Pan



Photo No. 030 - Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket

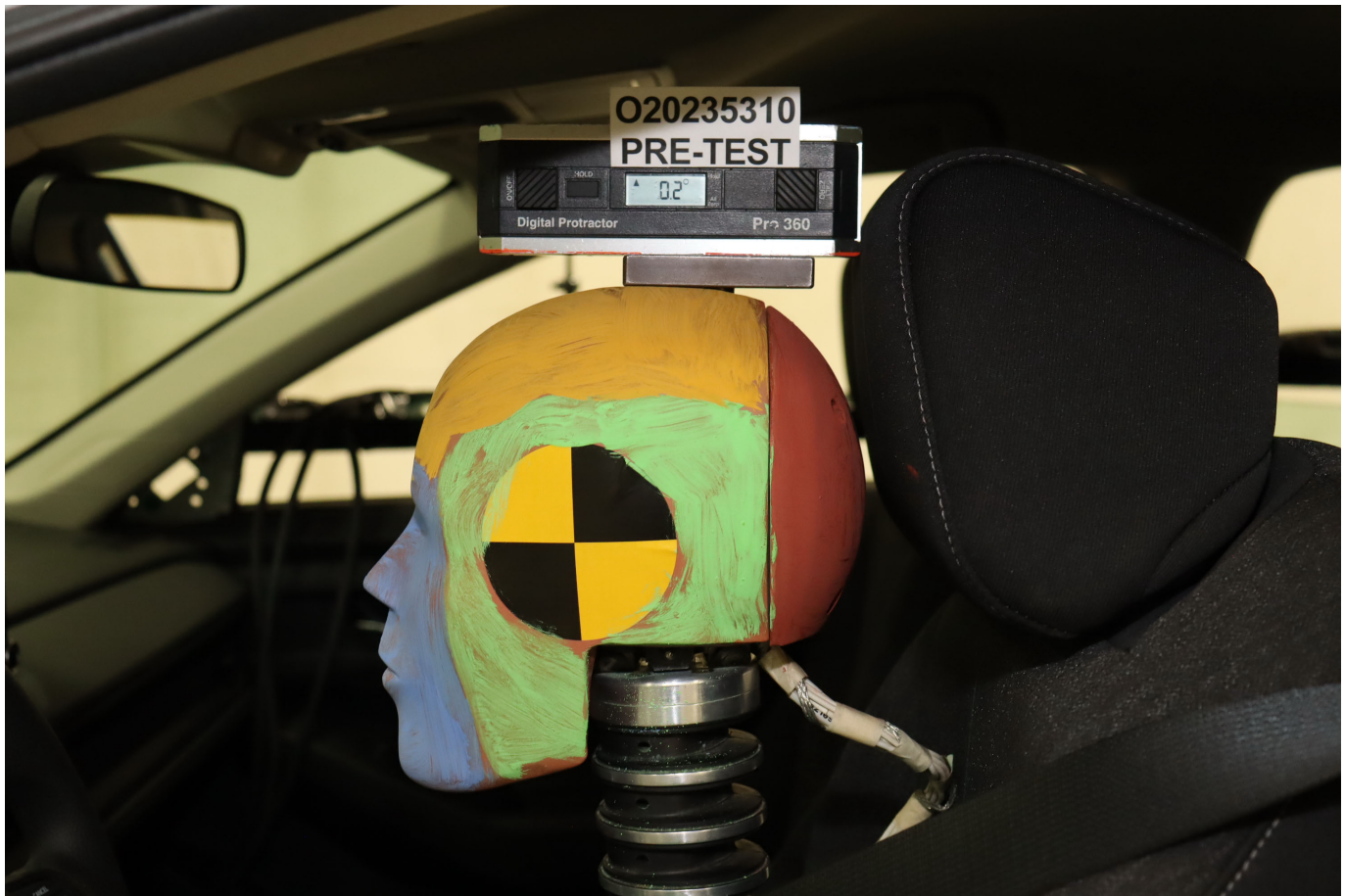


Photo No. 031 - Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level



Photo No. 032 - Pre-Test Placement of Dummy's Feet



Photo No. 033 - Pre-Test View of Belt Anchorage for Dummy



Photo No. 034 - Pre-Test Left Side View of Steering Wheel



Photo No. 035 - Pre-Test View of Disengaged Parking Brake



Photo No. 036 - Pre-Test View of Parking Brake



Photo No. 037 - Pre-Test Close-Up Left Side View of Driver Seat Track



Photo No. 038 - Pre-Test Close-Up Left Side View of Driver Seat Back



Photo No. 039 - Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Photo No. 040 - Pre-Test Dummy and Door Clearance View



Photo No. 041 - Post-Test Dummy and Door Clearance View



Photo No. 042 - Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Photo No. 043 - Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Photo No. 044 - Pre-Test Inner Door Panel View



Photo No. 045 - Post-Test Inner Door Panel View Showing Dummy Contact Location



Photo No. 046 - Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



Photo No. 047 - Post-Test Dummy Close-Up Head Contact with Side Air Bag View



Photo No. 048 - Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



Photo No. 049 - Post-Test Dummy Close-Up Torso Contact with Side Air Bag View



Photo No. 050 - Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



Photo No. 051 - Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View



Photo No. 052 - Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View

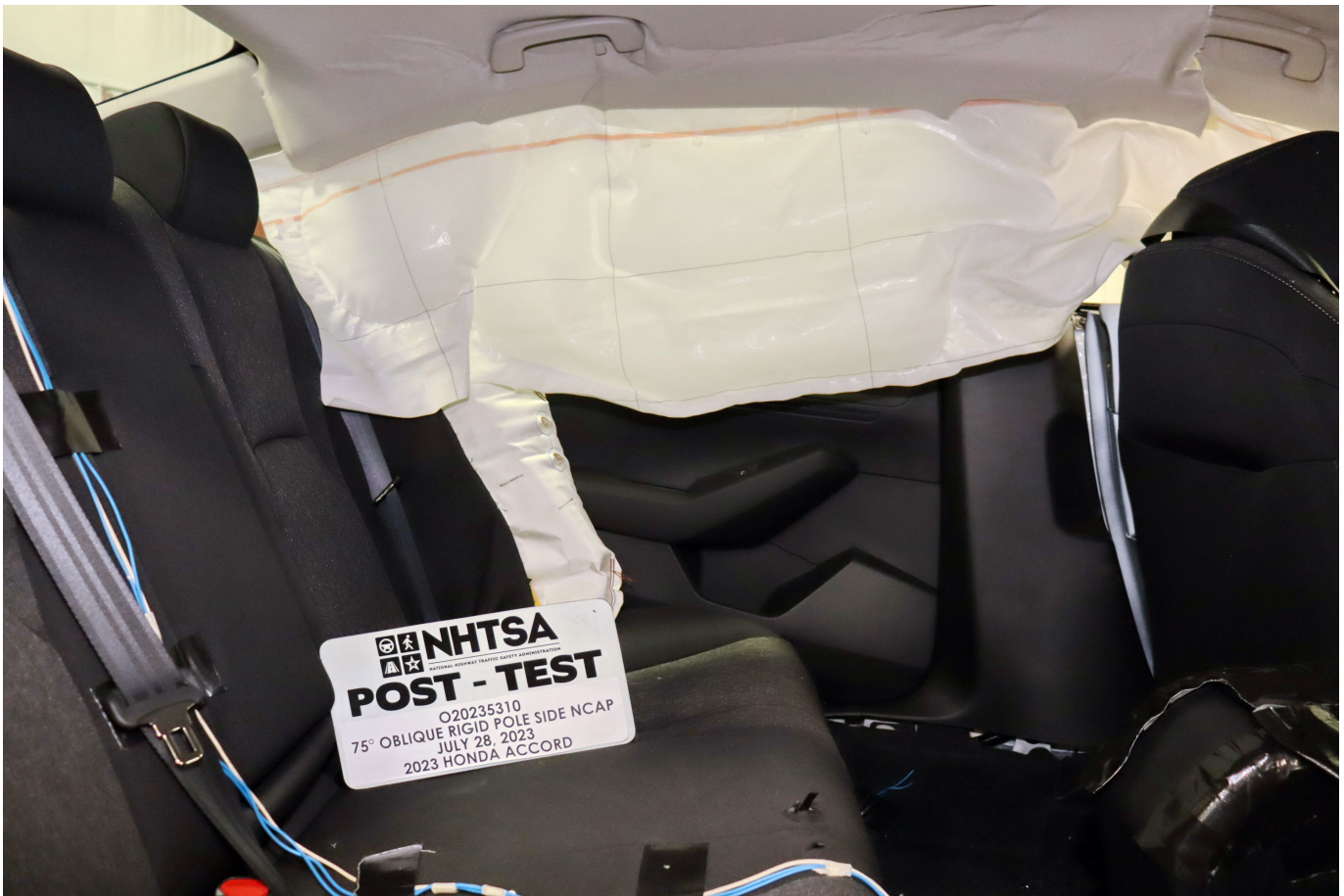


Photo No. 053 - Post-Test Right Side View of Dummy and Rear Seat of Occupant Compartment



Photo No. 054 - Post-Test Inner Rear Passenger Torso Air Bag Deployment View



Photo No. 055 - Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 056 - Post-Test View of Fuel Filler Cap or Fuel Filler Neck

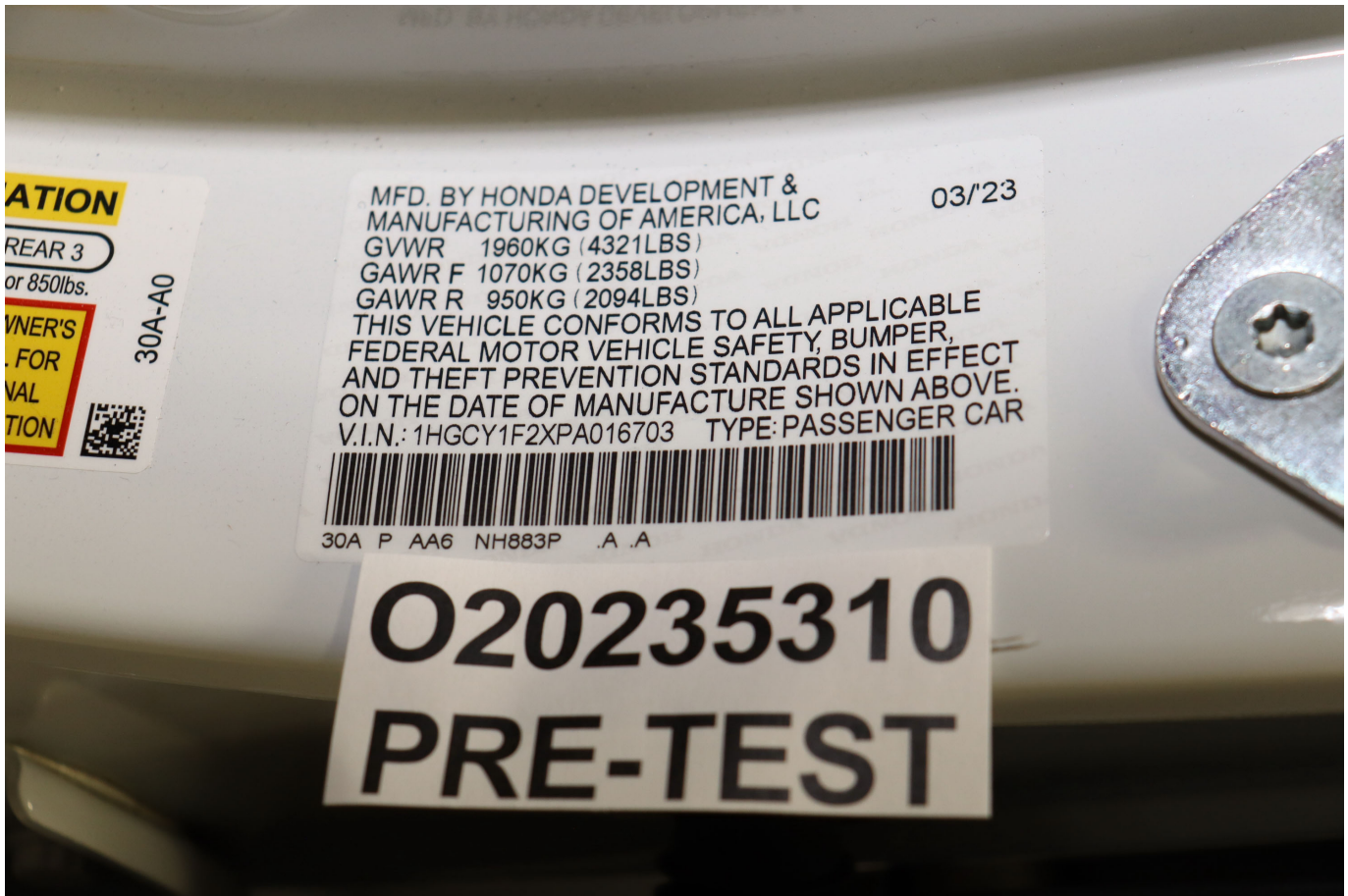


Photo No. 057 - Close-Up View of Vehicle's Certification Label



Photo No. 058 - Close-Up View of Vehicle's Tire Information Placard or Label



Photo No. 059 - Pre-Test Pole Barrier Front View



Photo No. 060 - Post-Test Pole Barrier Front View



Photo No. 061 - Pre-Test Pole Barrier Side View



Photo No. 062 - Post-Test Pole Barrier Side View

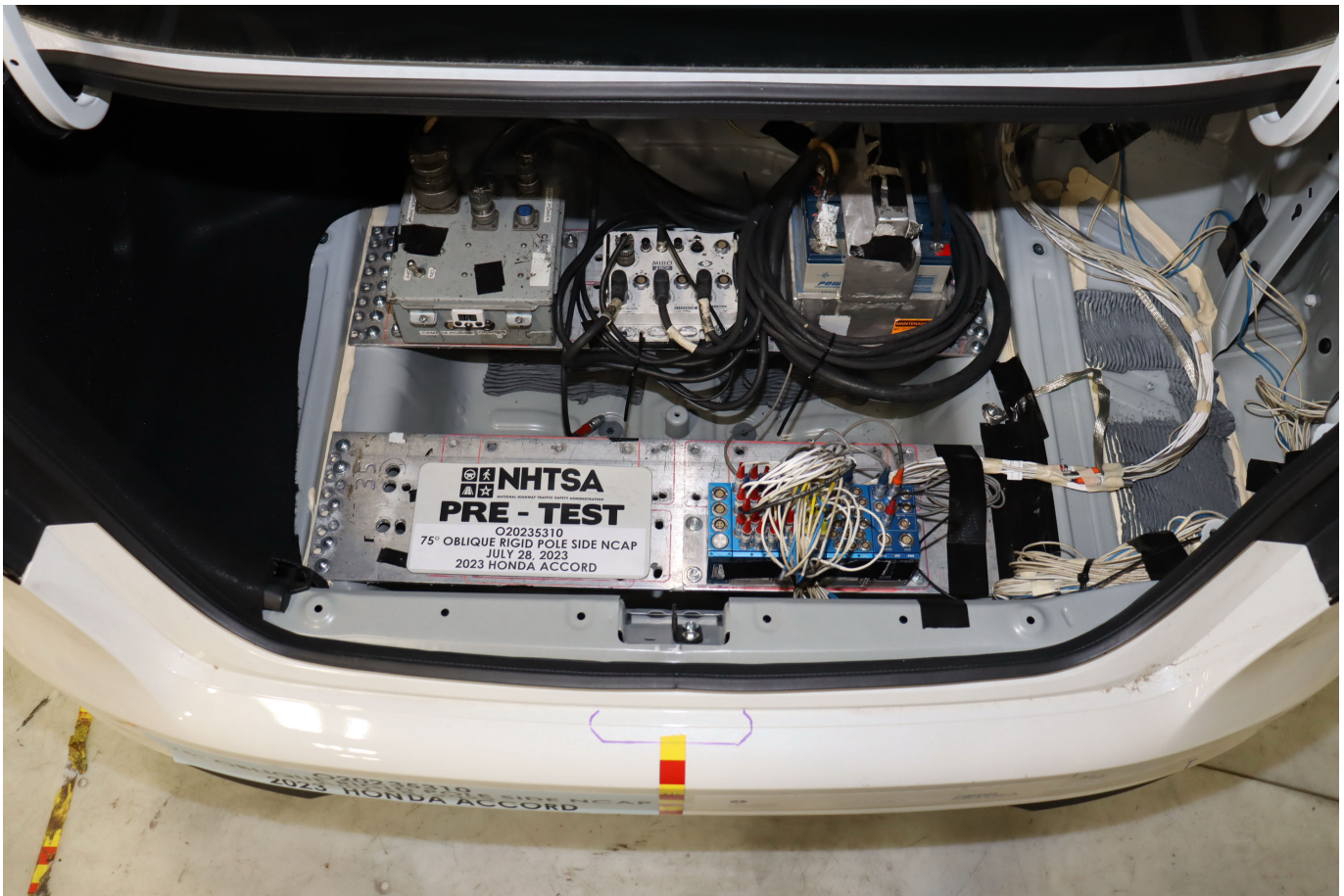


Photo No. 063 - Pre-Test Ballast View



Photo No. 064 - Post-Test Primary and Redundant Speed Trap Read-Out



Photo No. 065 - FMVSS Photo No. 301 Static Rollover 0 Degrees



Photo No. 066 - FMVSS Photo No. 301 Static Rollover 90 Degrees



Photo No. 067 - FMVSS Photo No. 301 Static Rollover 180 Degrees

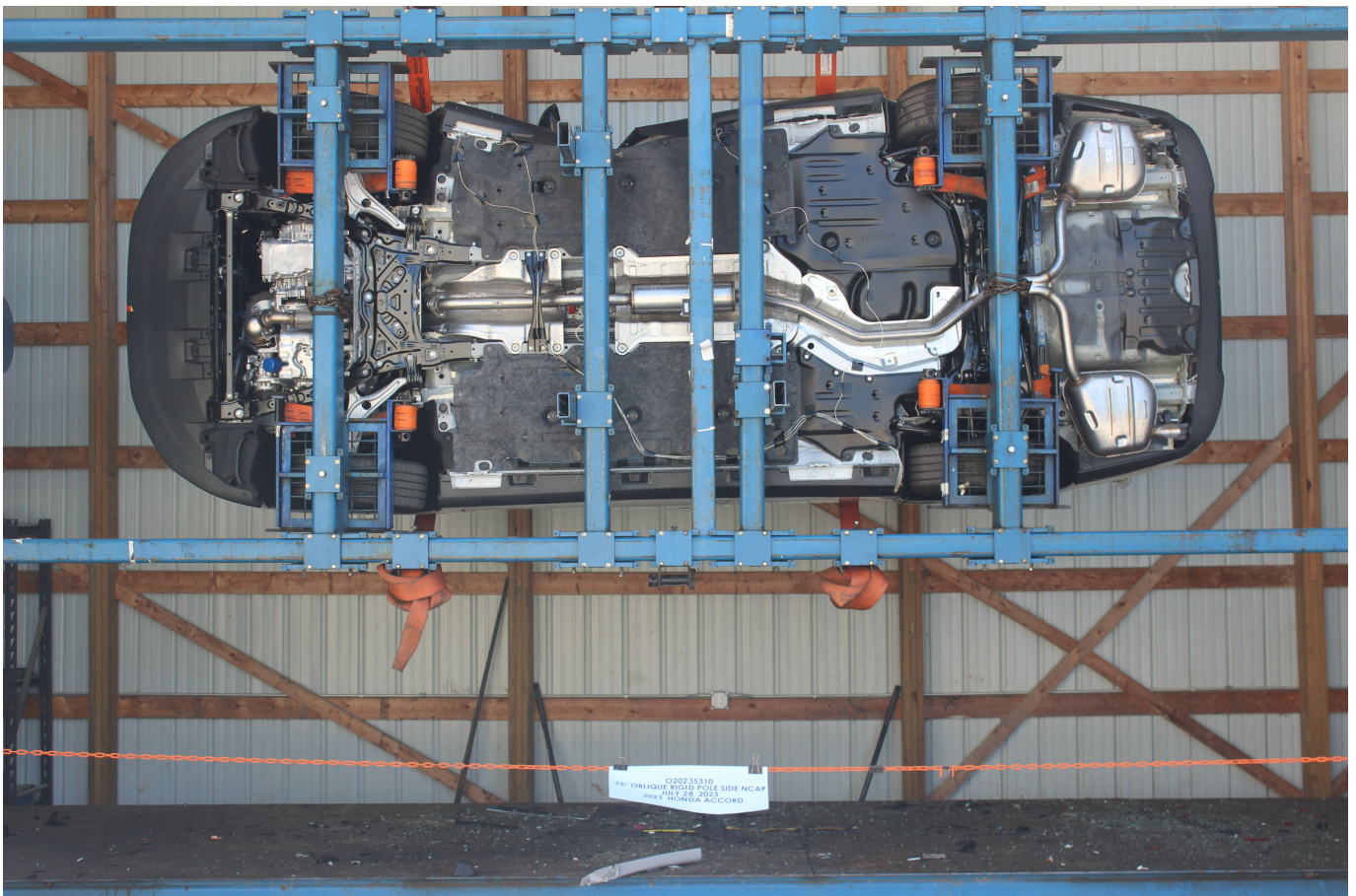


Photo No. 068 - FMVSS Photo No. 301 Static Rollover 270 Degrees



Photo No. 069 - FMVSS Photo No. 301 Static Rollover 360 Degrees



Photo No. 070 - Impact Event



Photo No. 073 - Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B
DUMMY RESPONSE DATA PLOTS

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Driver Dummy Instrumentation Plots

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Figure No. 4.	Driver Head CG Resultant Acceleration (X) vs. Time	B-1
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Figure No. 11.	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

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.gov

Additional Driver Dummy Instrumentation Data

Driver Head CG Redundant Acceleration (X) vs. Time
Driver Head CG Redundant Acceleration (Y) vs. Time
Driver Head CG Redundant Acceleration (Z) vs. Time
Driver Head Angular Velocity X (Deg/Sec) vs. Time
Driver Head Angular Velocity Y (Deg/Sec) vs. Time
Driver Head Angular Velocity Z (Deg/Sec) vs. Time
Driver Upper Thorax Rib Deflection (Y)
Driver Middle Thorax Rib Deflection (Y)
Driver Lower Thorax Rib Deflection (Y)
Driver Upper Abdomen Rib Deflection (Y)
Driver Lower Abdomen Rib Deflection (Y)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)

Vehicle Center of Gravity Acceleration (Y)

Vehicle Center of Gravity Acceleration (Z)

Left Floor Sill Acceleration (Y)

Left A-Pillar Sill Acceleration (Y)

Left Lower A-Pillar Acceleration (Y)

Left Mid A-Pillar Acceleration (Y)

Left B-Pillar Sill Acceleration (Y)

Left Lower B-Pillar Acceleration (Y)

Left Mid B-Pillar Acceleration (Y)

Driver Seat Track at Dummy Hip Point Acceleration (Y)

Engine Top Acceleration (X)

Engine Top Acceleration (Y)

Firewall Center Acceleration (Y)

Right Roof at Vertical Impact Reference Line Acceleration (Y)

Right Sill at Vertical Impact Reference Line Acceleration (Y)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)

Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

Pole Instrumentation Data

Load Cell Pole Barrier #1 Force (Y)

Load Cell Pole Barrier #2 Force (Y)

Load Cell Pole Barrier #3 Force (Y)

Load Cell Pole Barrier #4 Force (Y)

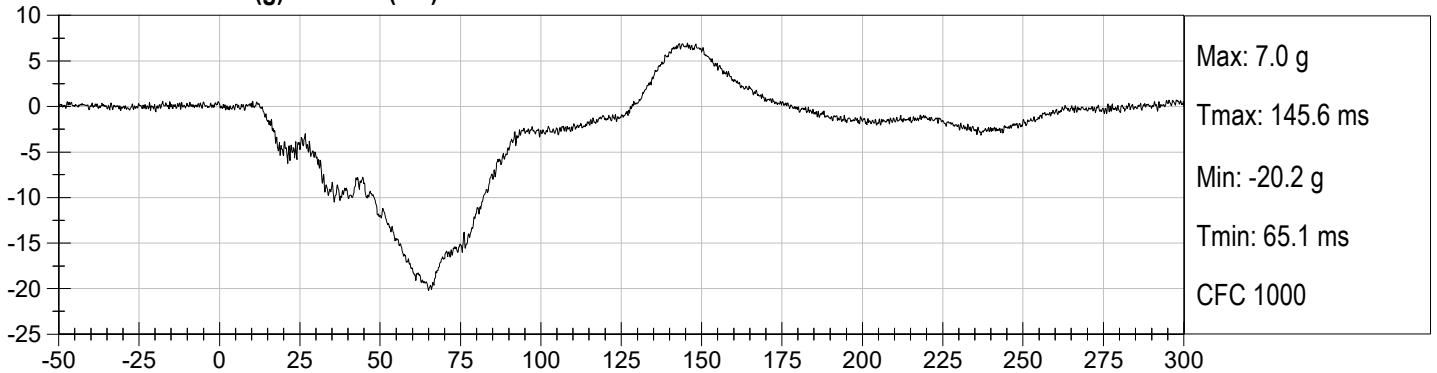
Load Cell Pole Barrier #5 Force (Y)

Load Cell Pole Barrier #6 Force (Y)

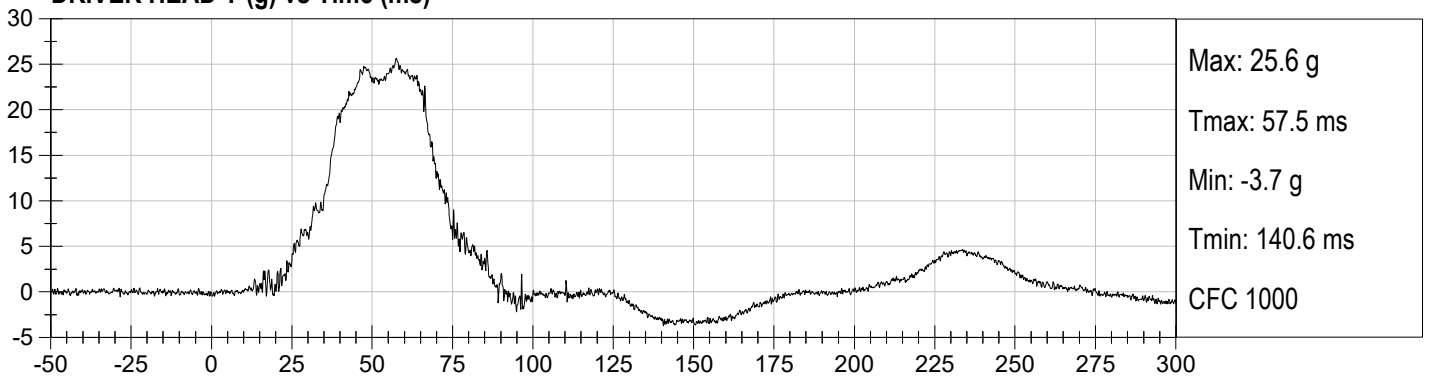
Load Cell Pole Barrier #7 Force (Y)

Load Cell Pole Barrier #8 Force (Y)

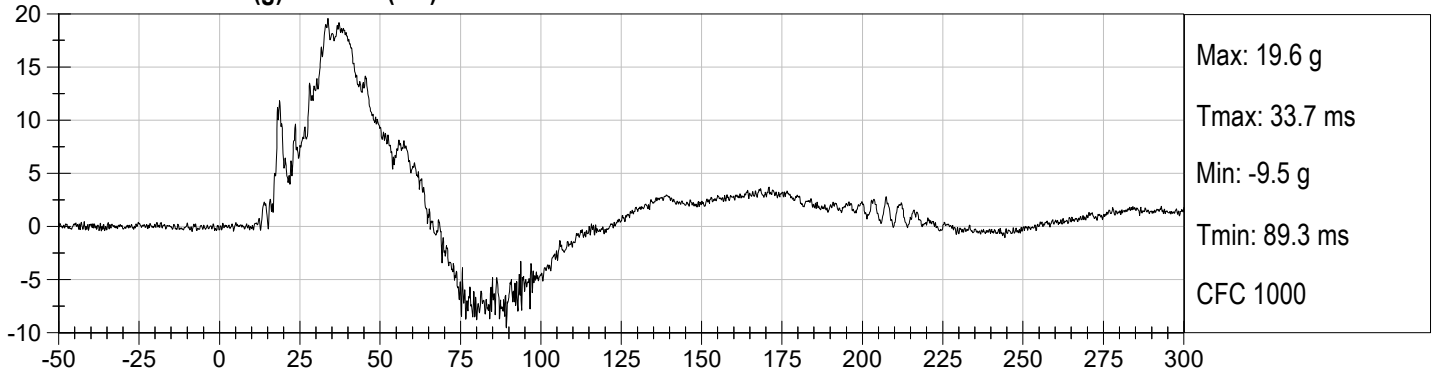
DRIVER HEAD X (g) vs Time (ms)



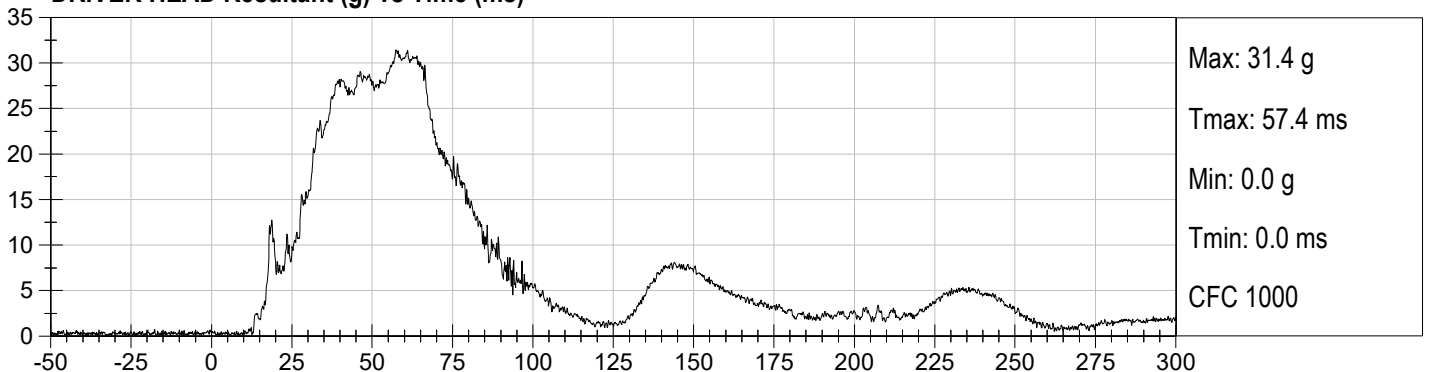
DRIVER HEAD Y (g) vs Time (ms)



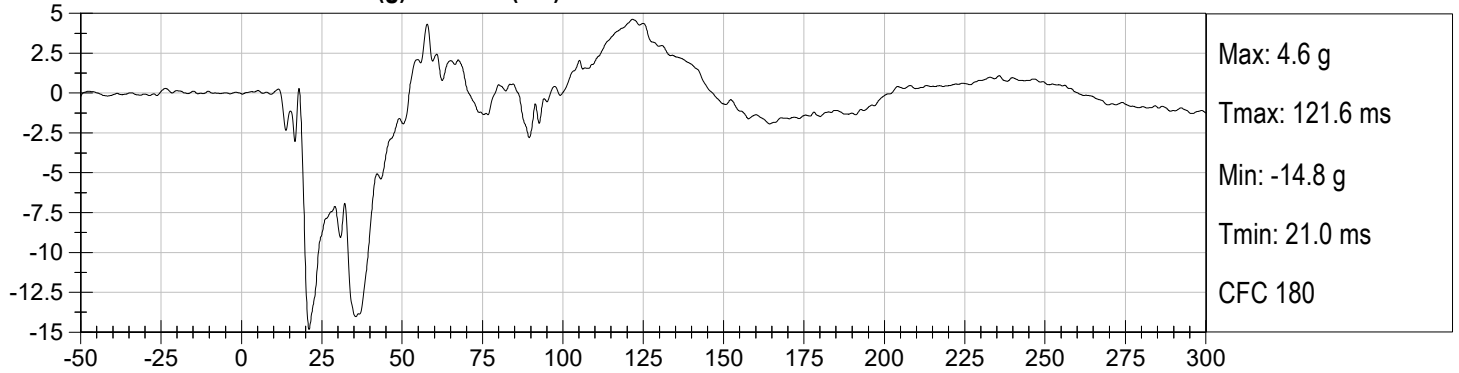
DRIVER HEAD Z (g) vs Time (ms)



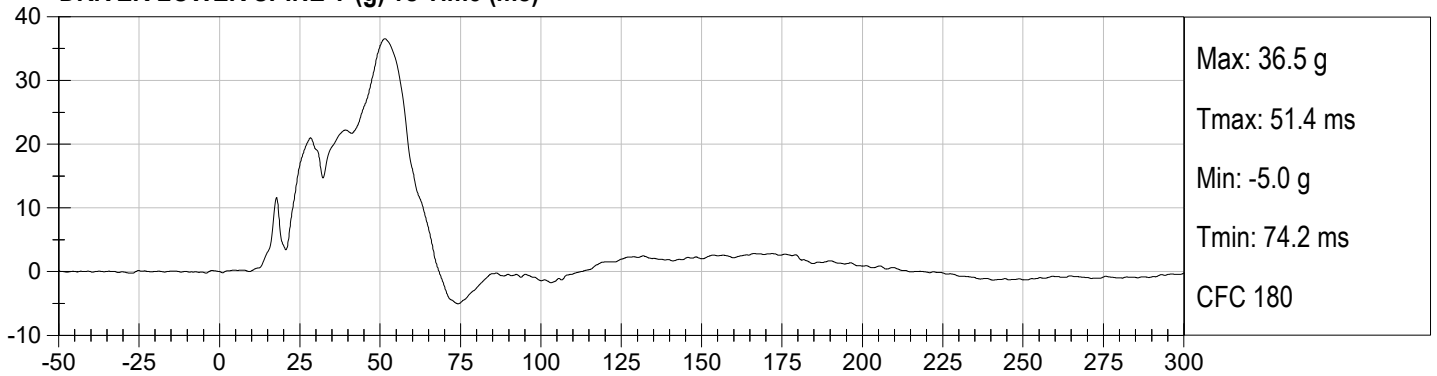
DRIVER HEAD Resultant (g) vs Time (ms)



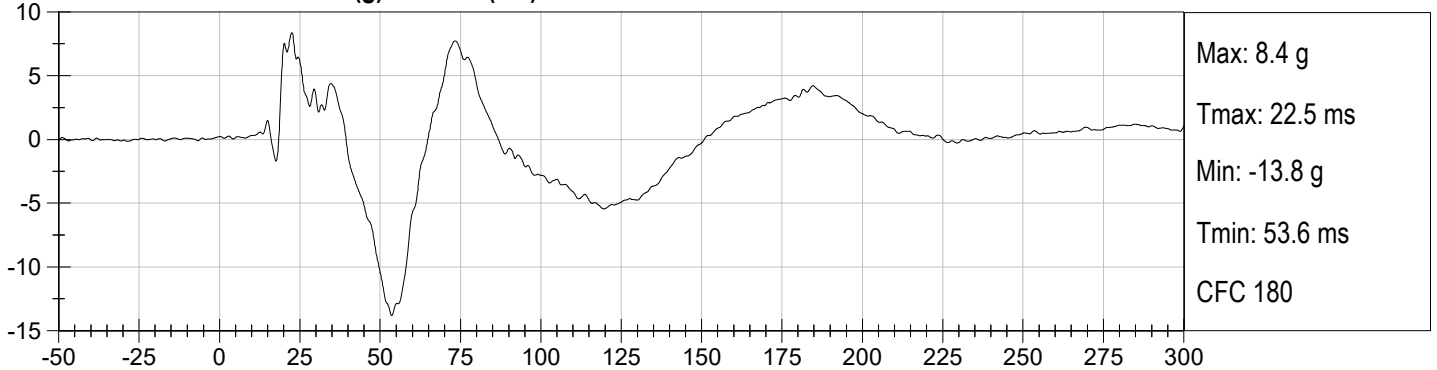
DRIVER LOWER SPINE X (g) vs Time (ms)



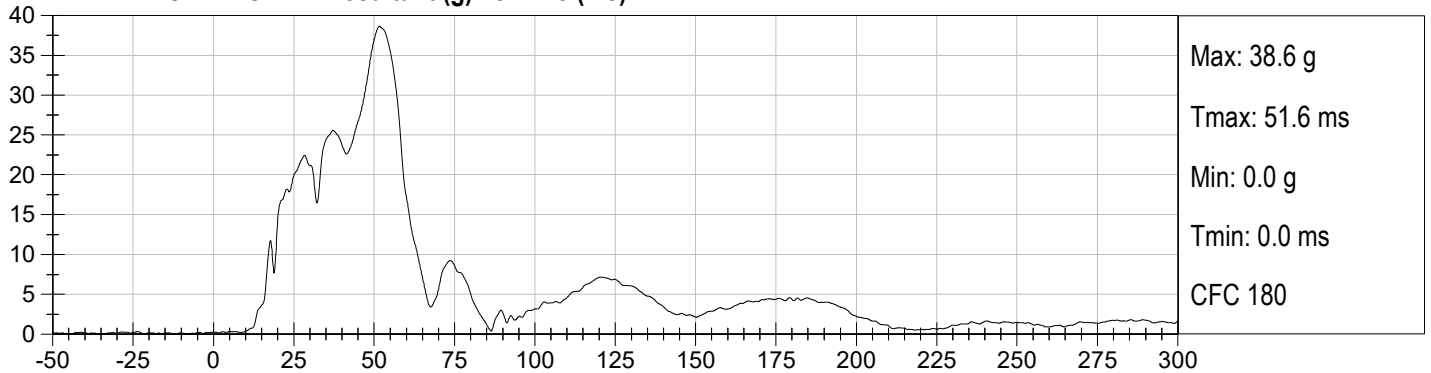
DRIVER LOWER SPINE Y (g) vs Time (ms)



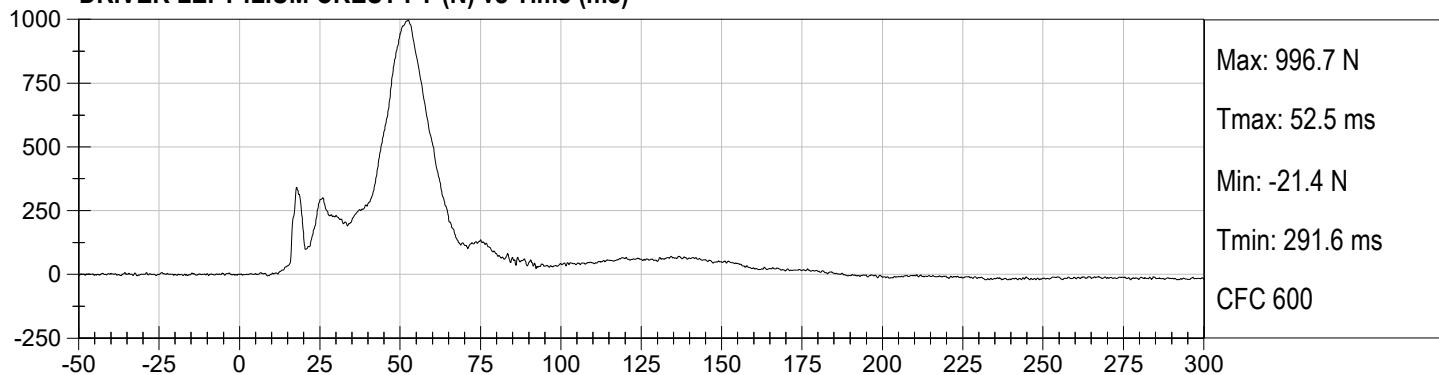
DRIVER LOWER SPINE Z (g) vs Time (ms)



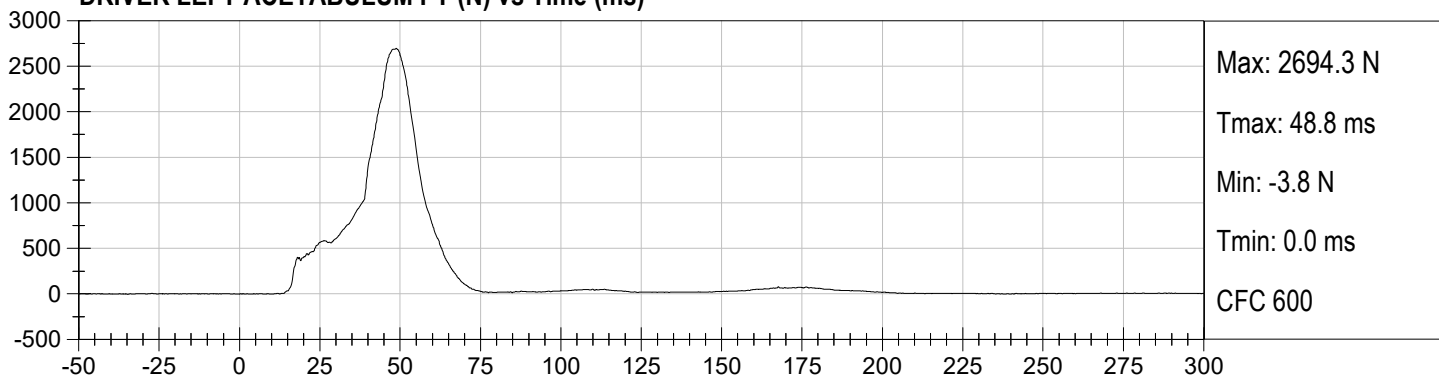
DRIVER LOWER SPINE Resultant (g) vs Time (ms)



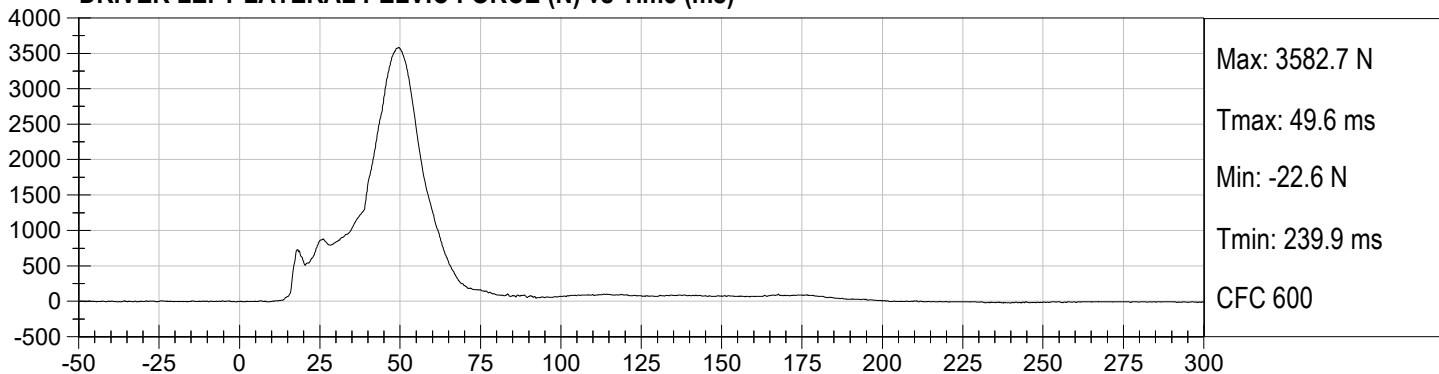
DRIVER LEFT ILIUM CREST FY (N) vs Time (ms)



DRIVER LEFT ACETABULUM FY (N) vs Time (ms)



DRIVER LEFT LATERAL PELVIC FORCE (N) vs Time (ms)



APPENDIX C
DUMMY QUALIFICATION AND PERFORMANCE VERIFICATION

QUALIFICATION TEST RESULTS

PRE-TEST

SID-IIS 5TH PERCENTILE FEMALE - DRIVER ATD

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

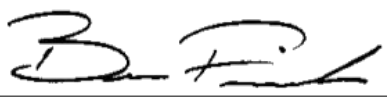
Test ID: D231771

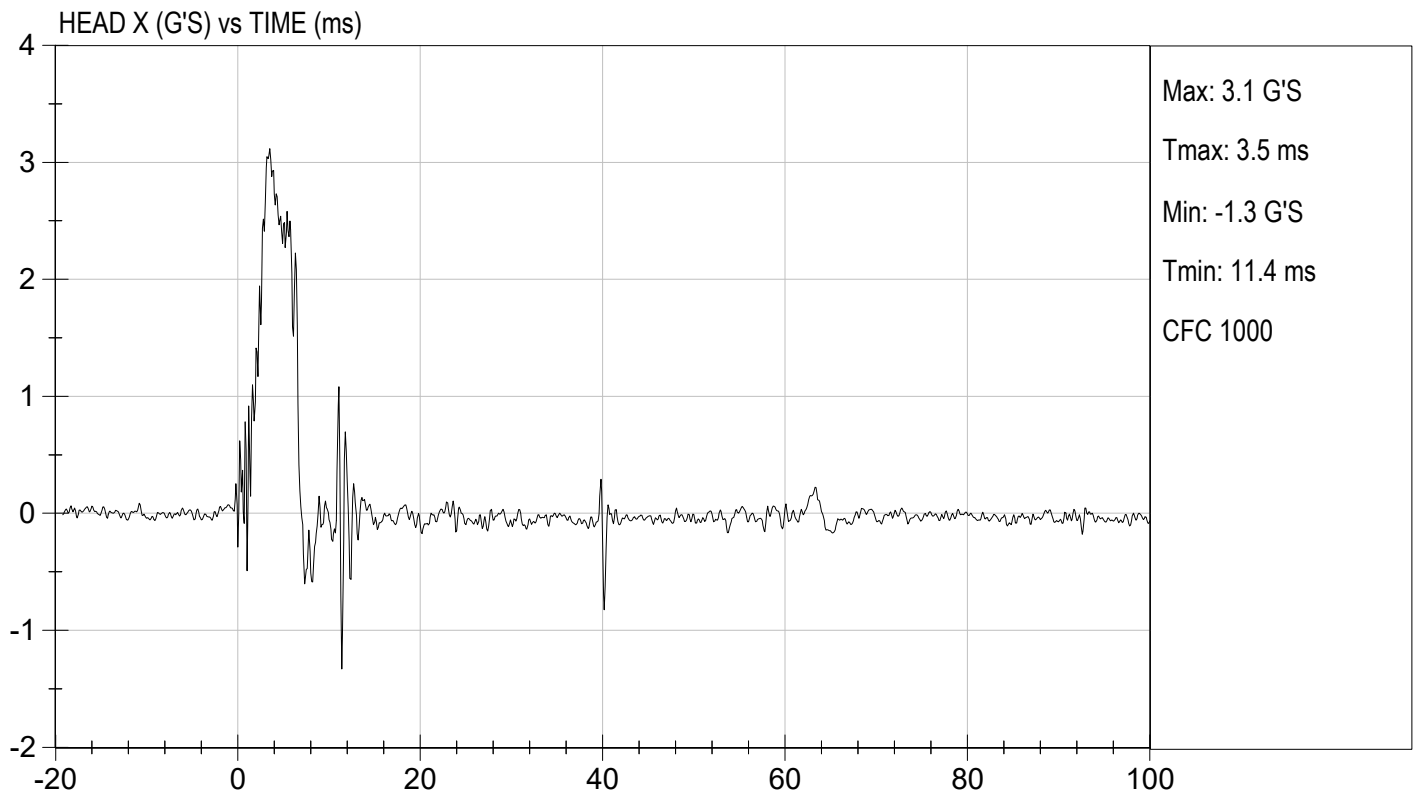
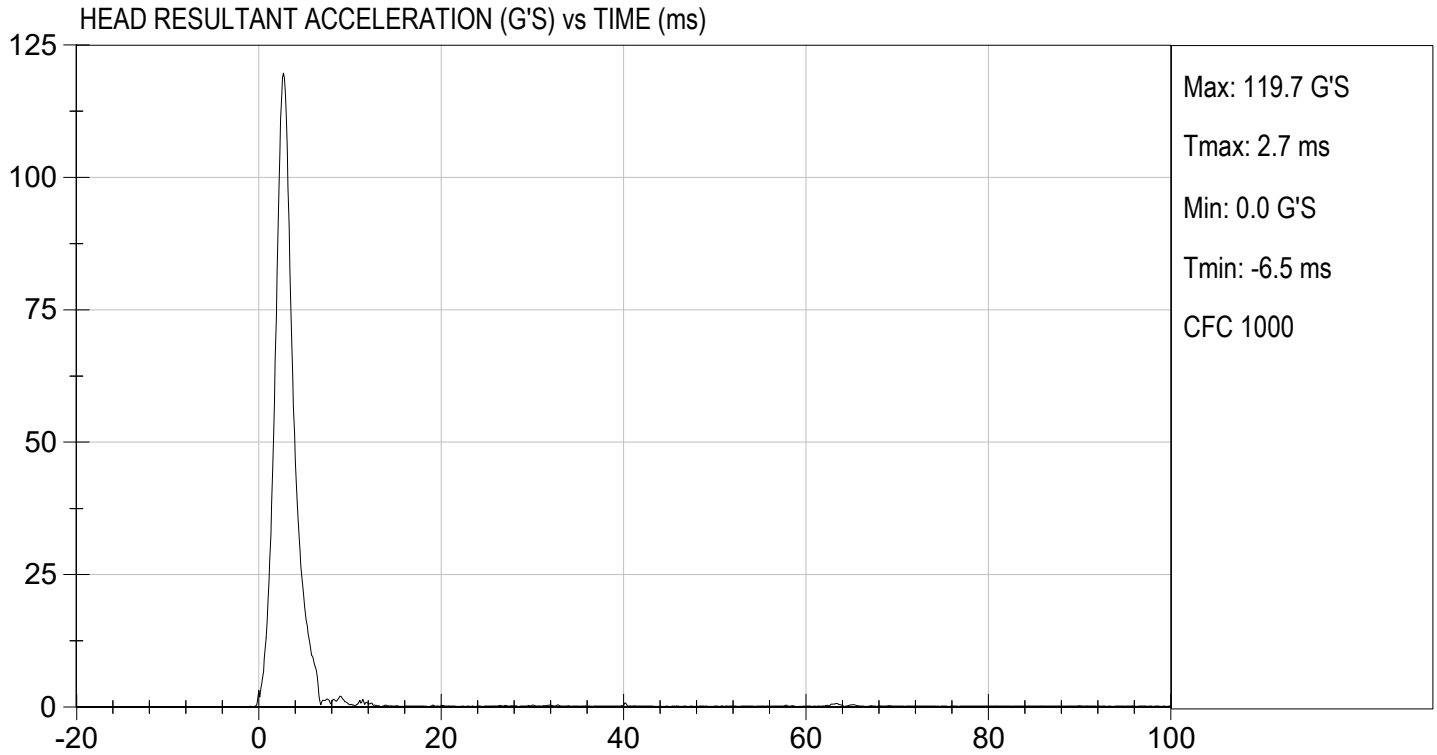
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Peak Resultant Acceleration	G's	115 to 137	120	Pass
Peak Longitudinal Acceleration	G's	+/- 15	3.1	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results			Pass	

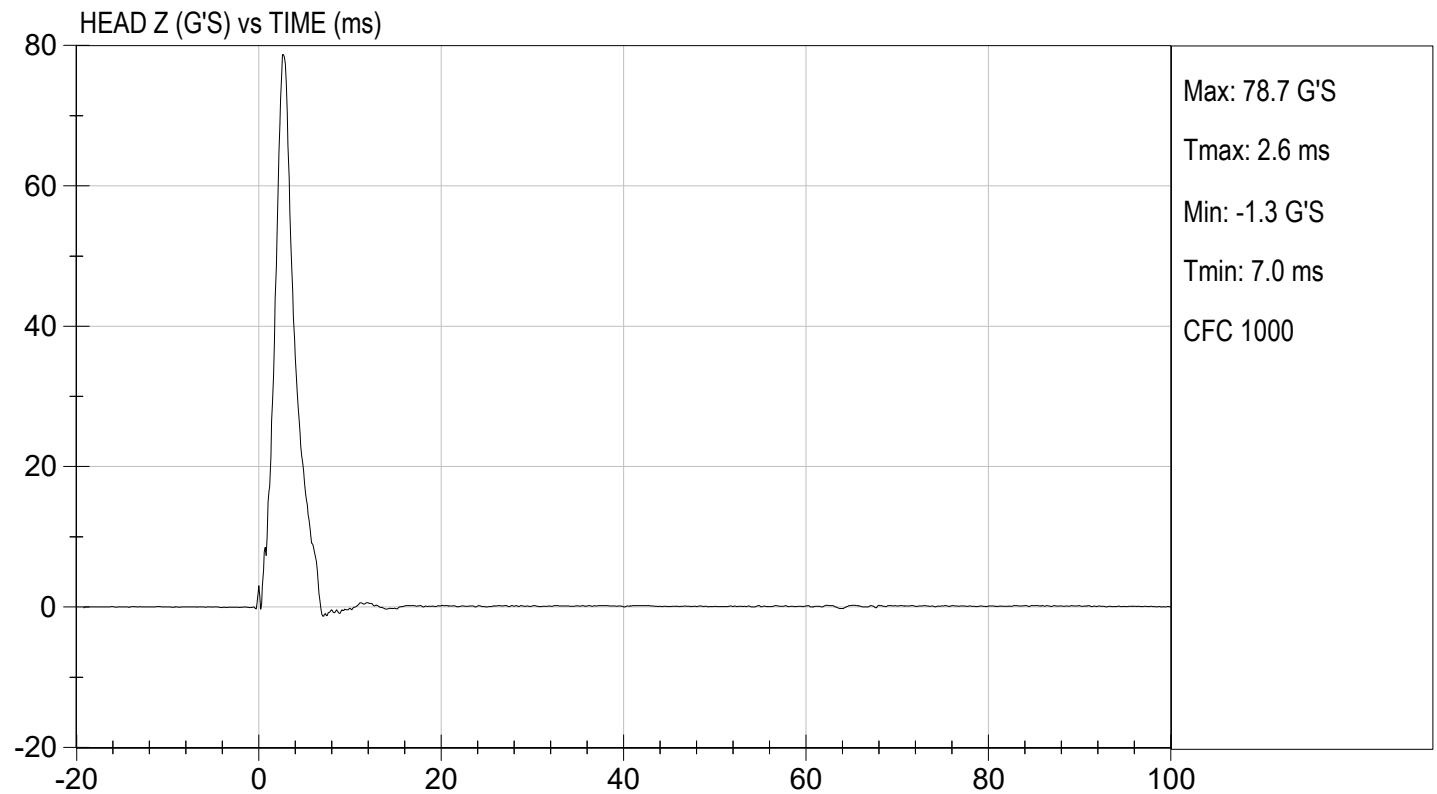
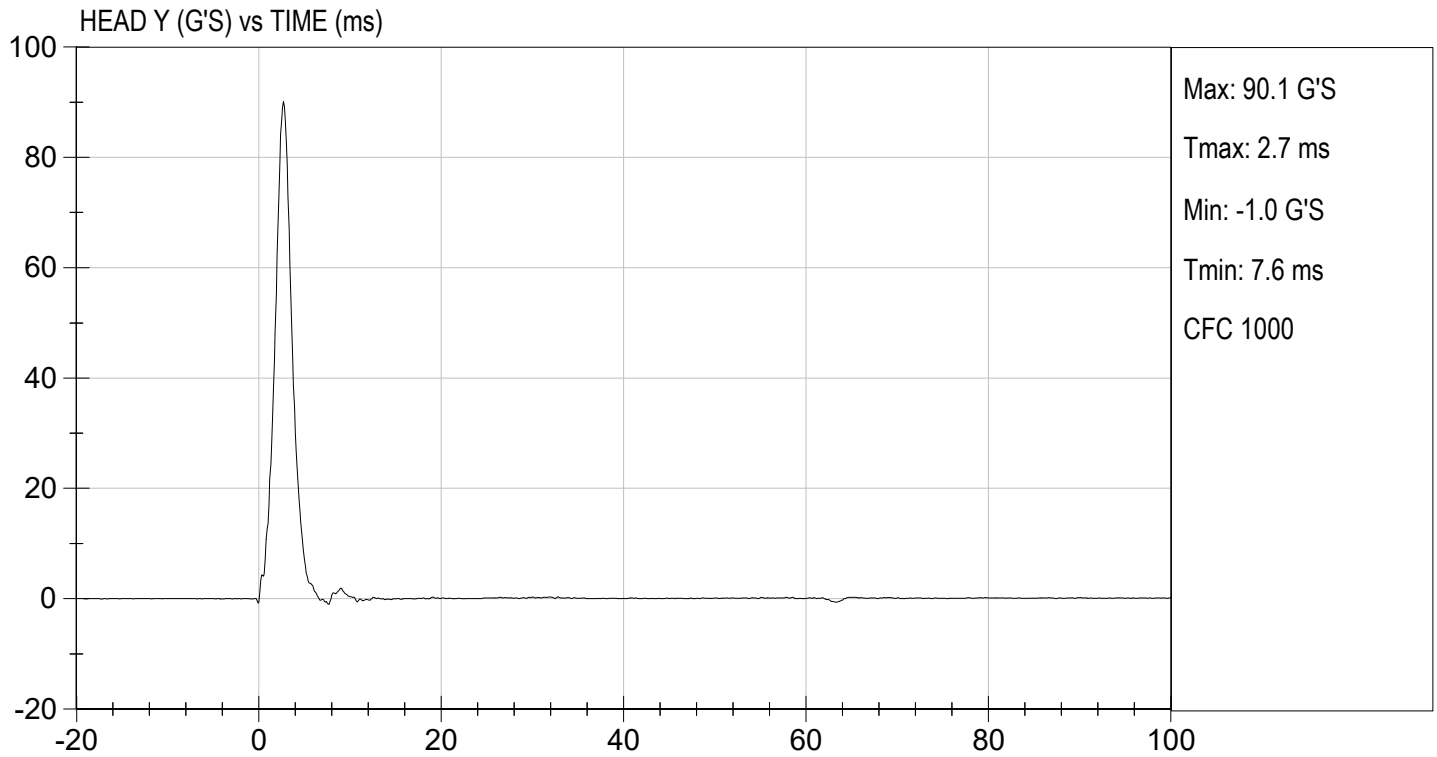

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07/15/2023

Test Date


Approved By





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

ATD Serial No: 296

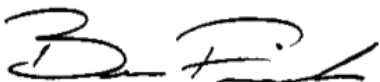
Test I.D: D231772

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.7	Pass
Humidity		%	10 to 70	46	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	3.72	Pass
	20 ms	m/s	4.40 to 5.40	5.24	Pass
	25 ms	m/s	5.40 to 6.10	5.78	Pass
	25-100 ms	m/s	5.50 to 6.20	5.80	Pass
Maximum D-Plane Rotation		deg	71 to 81	74	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	62	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-38	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	113	Pass
Overall Test Results				Pass	


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07/15/2023

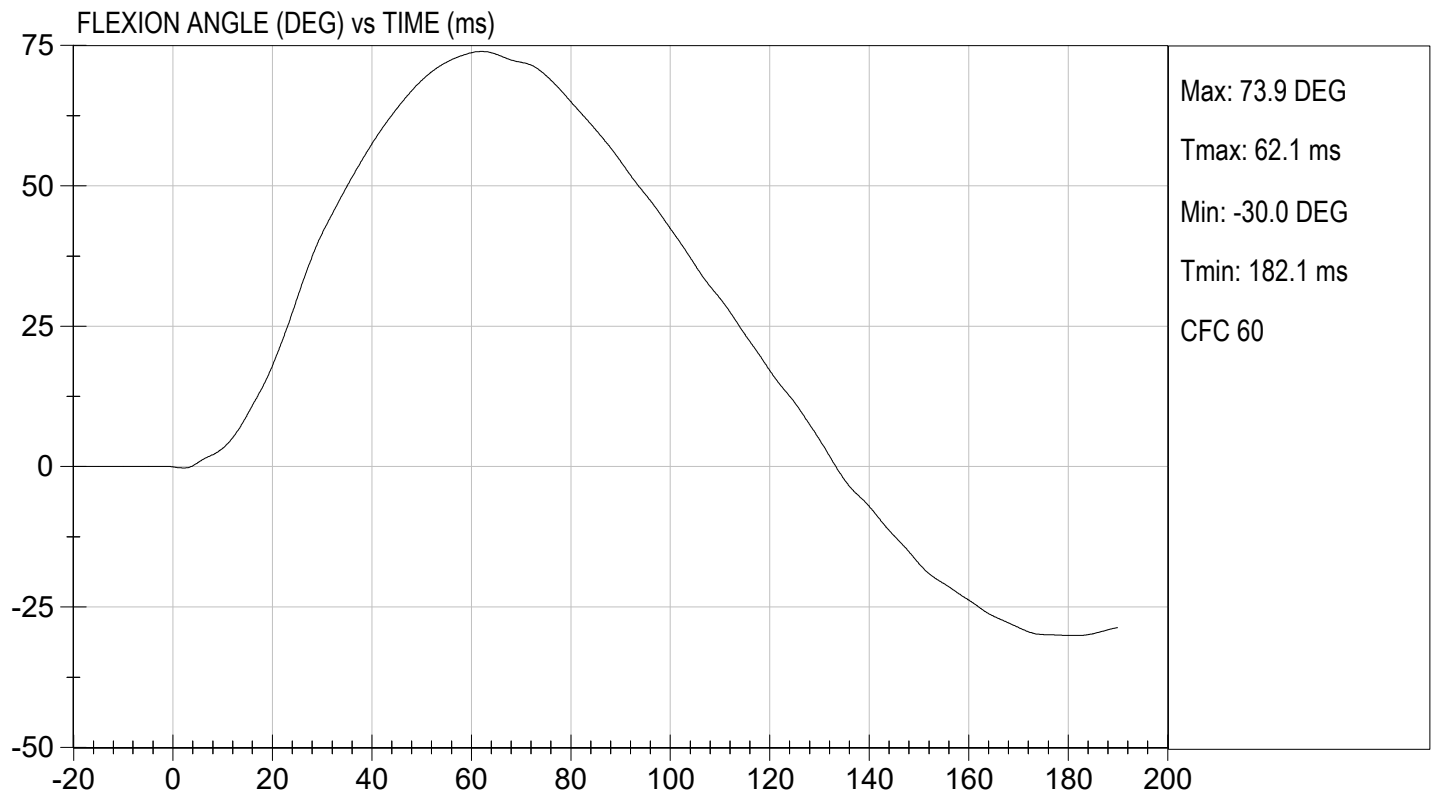
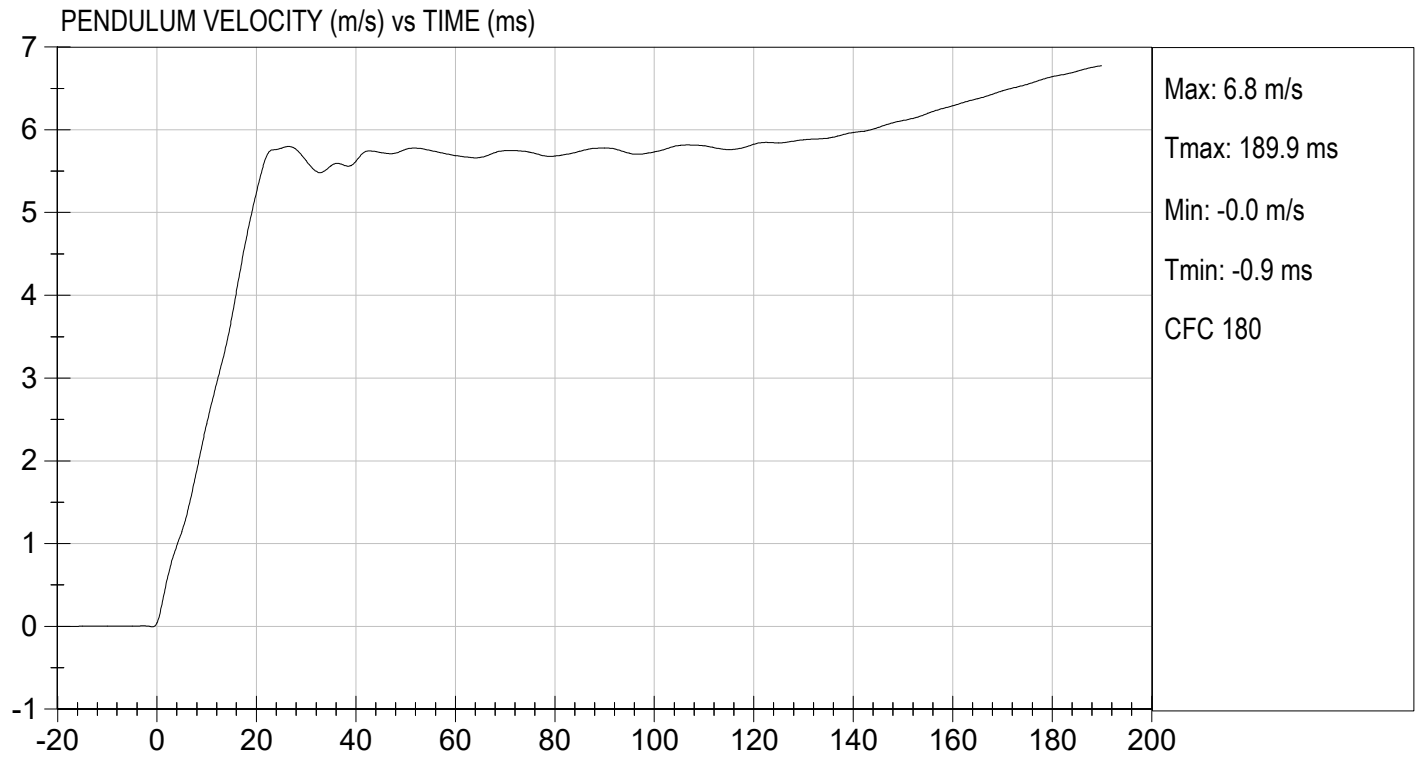
Test Date


 Approved By



TEST DESC: NECK BENDING
VELOCITY: 18.32 ft/s, 5.58 m/s

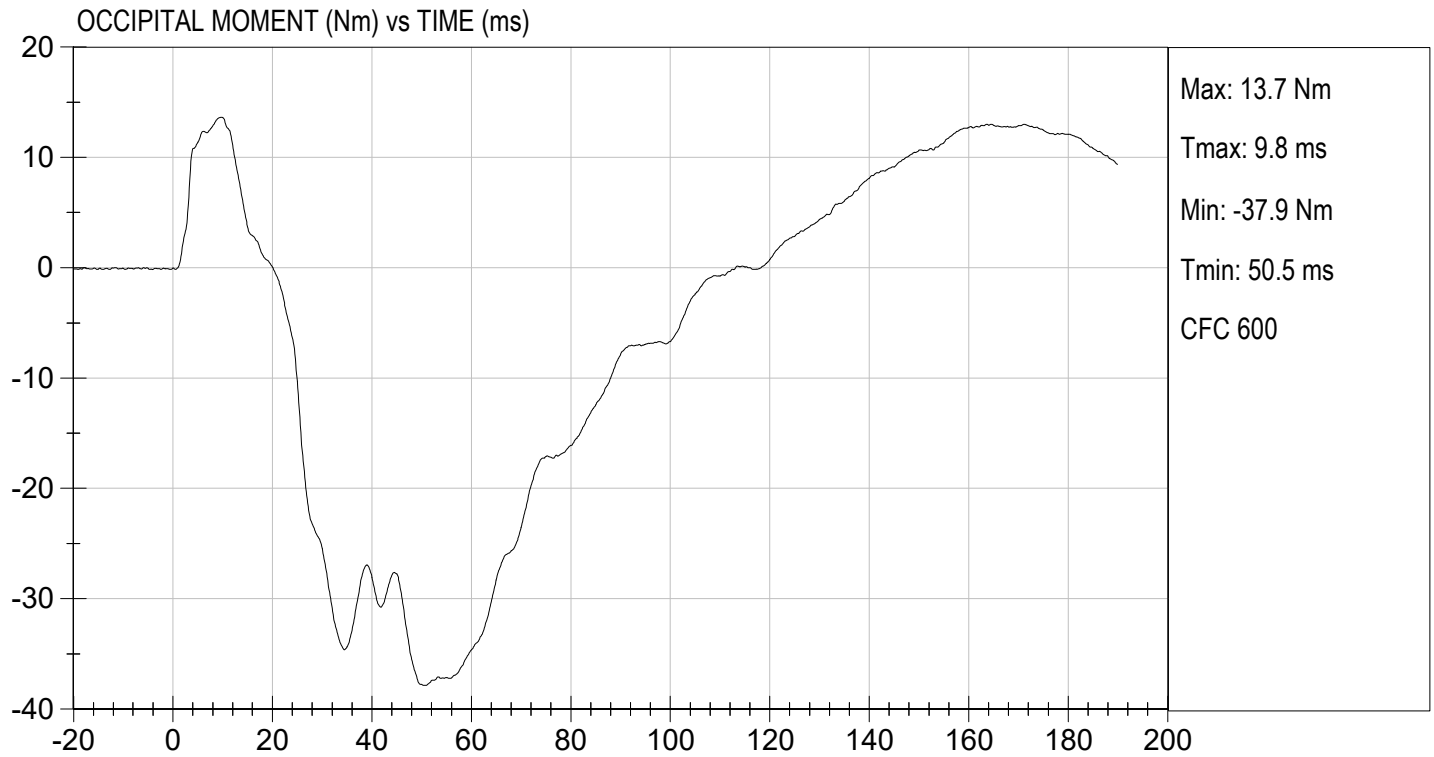
TEST DATE: 07/15/2023
TEST #: D231772





TEST DESC: NECK BENDING
VELOCITY: 18.32 ft/s, 5.58 m/s

TEST DATE: 07/15/2023
TEST #: D231772



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

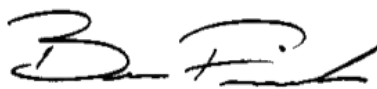
ATD Serial No: 296

Test ID: D231773

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	45	Pass
Impact Velocity	m/s	4.20 to 4.40	4.39	Pass
Maximum Probe Acceleration	G's	13 to 18	16	Pass
Shoulder Displacement	mm	28 to 37	31	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	20	Pass
Overall Test Results			Pass	


Laboratory Technician

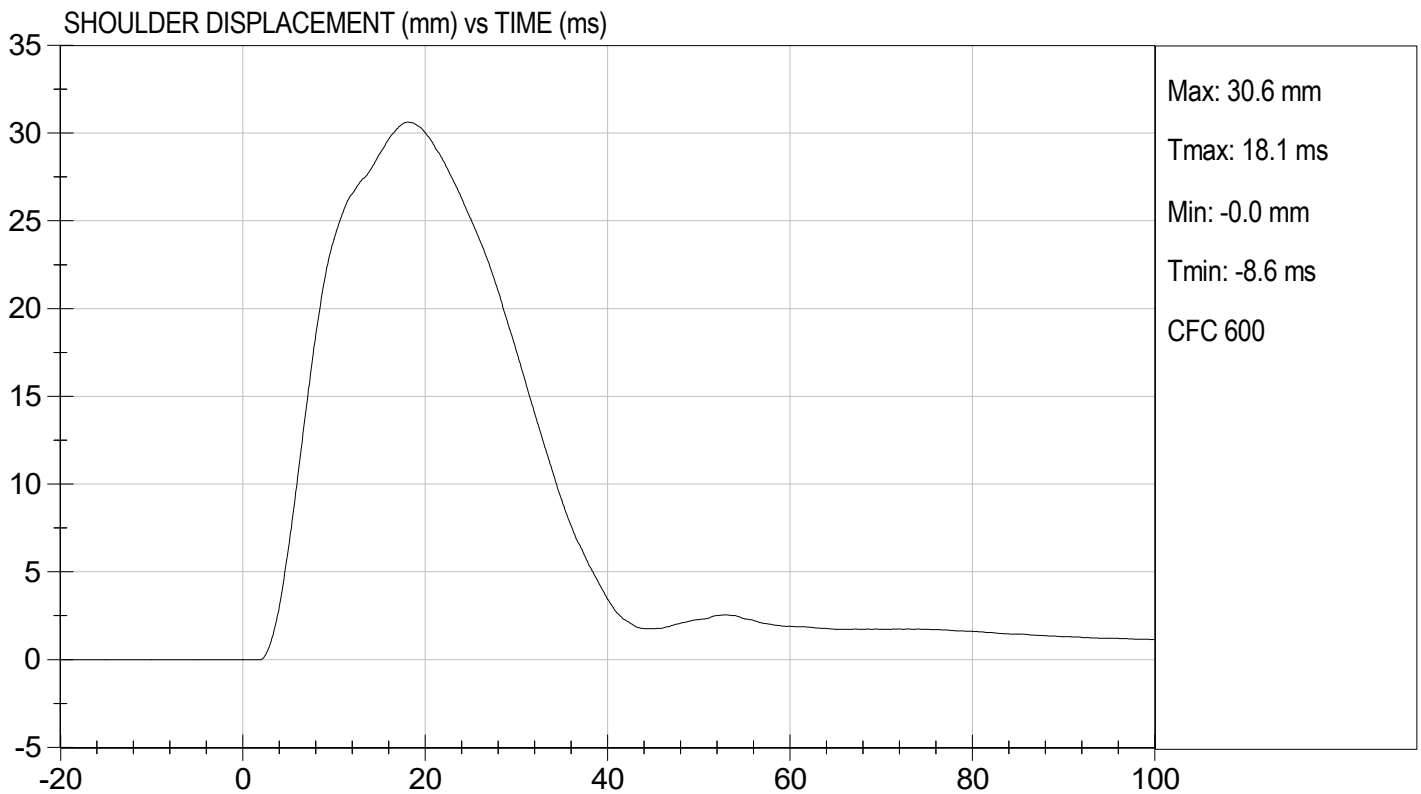
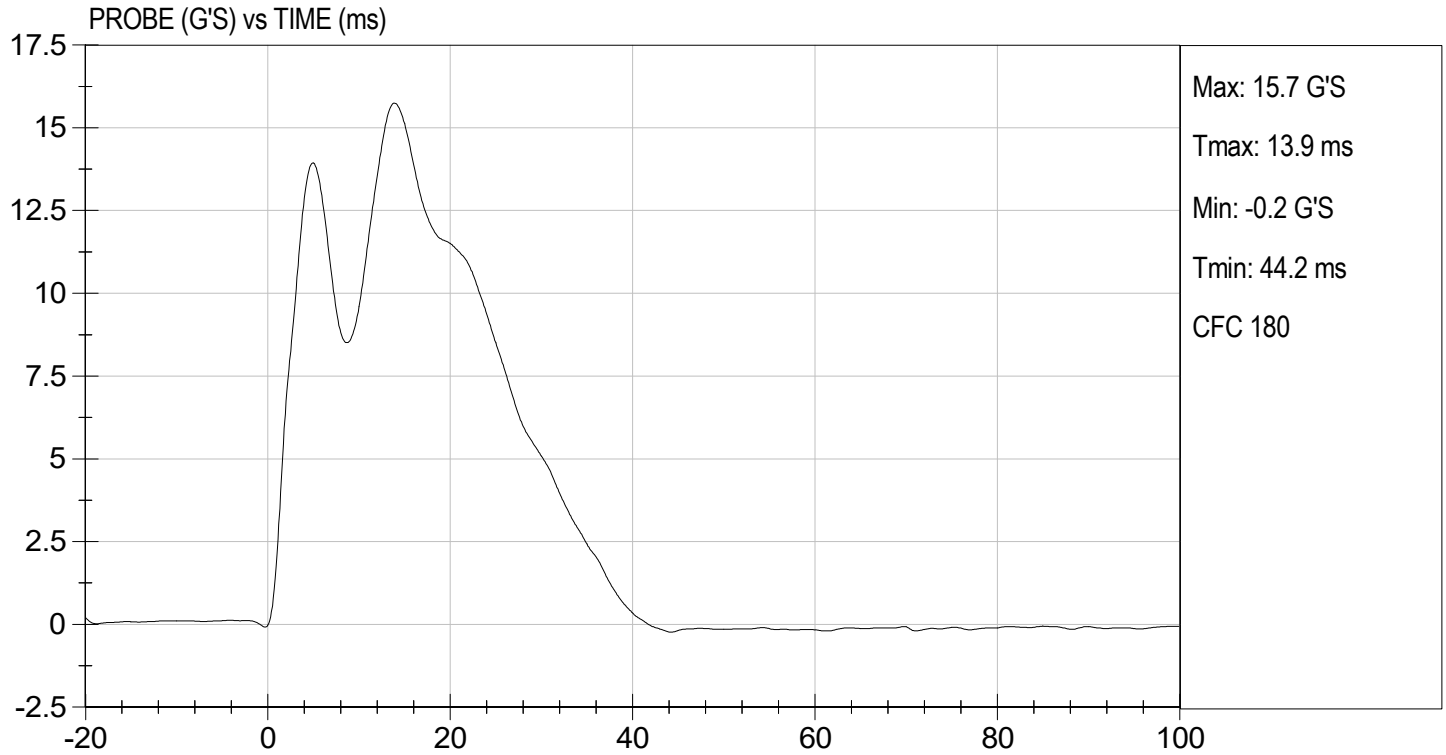
07/15/2023
Test Date


Approved By



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.40 ft/s, 4.39 m/s

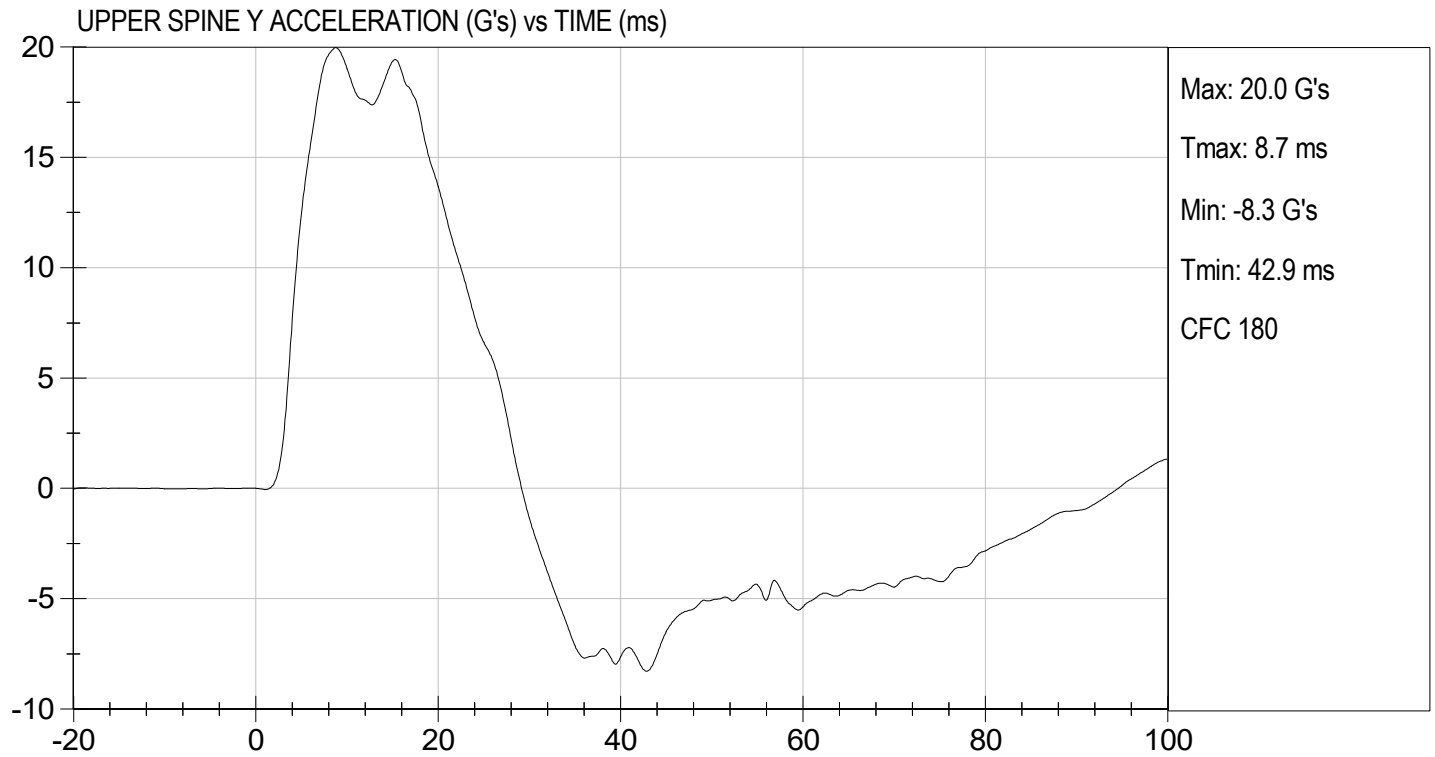
TEST DATE: 07/15/2023
TEST #: D231773





TEST DESC: SHOULDER IMPACT
VELOCITY: 14.40 ft/s, 4.39 m/s

TEST DATE: 07/15/2023
TEST #: D231773



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

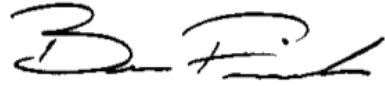
ATD Serial No: 296

Test I.D: D231774

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	34	Pass
Upper Rib Displacement	mm	25 to 32	29	Pass
Middle Rib Displacement	mm	30 to 36	33	Pass
Lower Rib Displacement	mm	32 to 38	35	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
Overall Test Results				Pass


Laboratory Technician

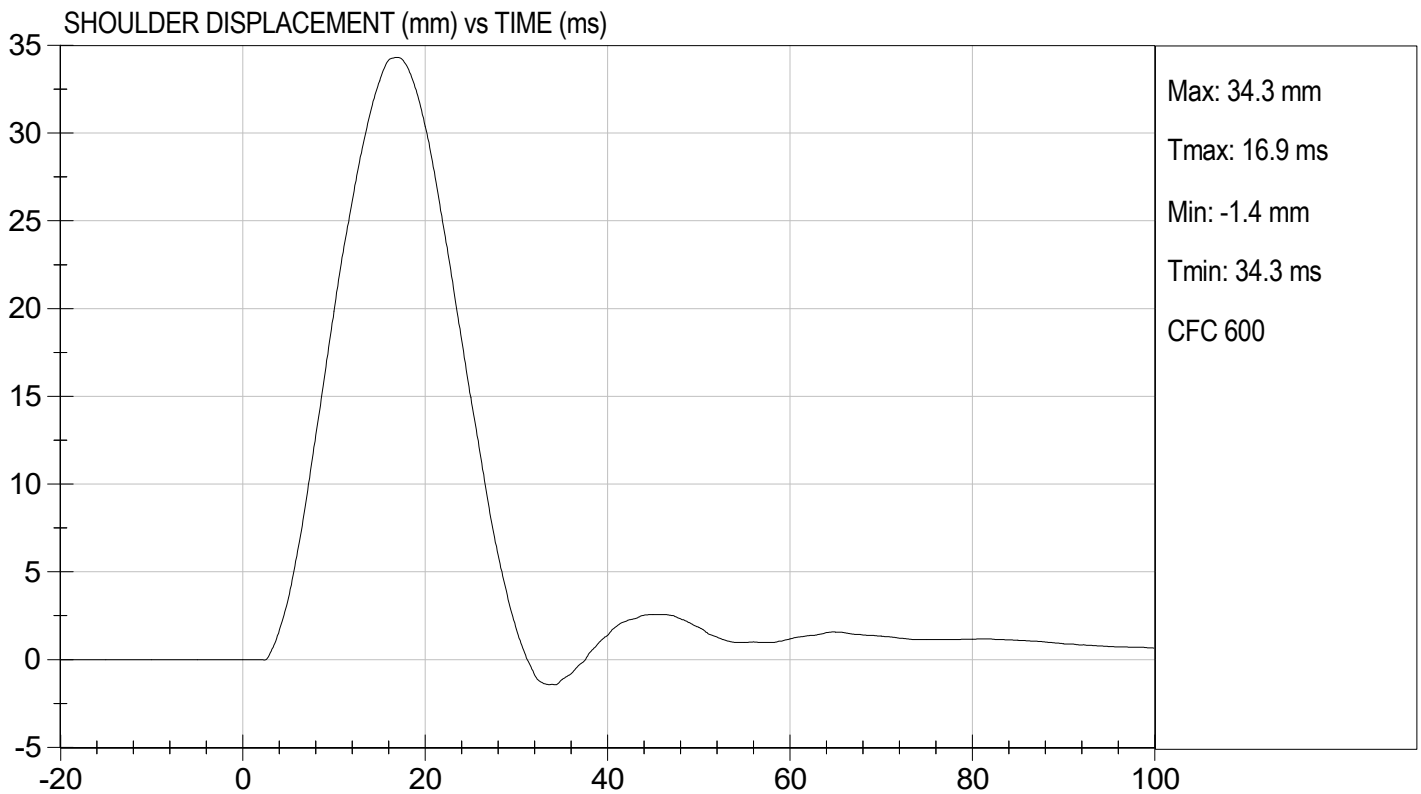
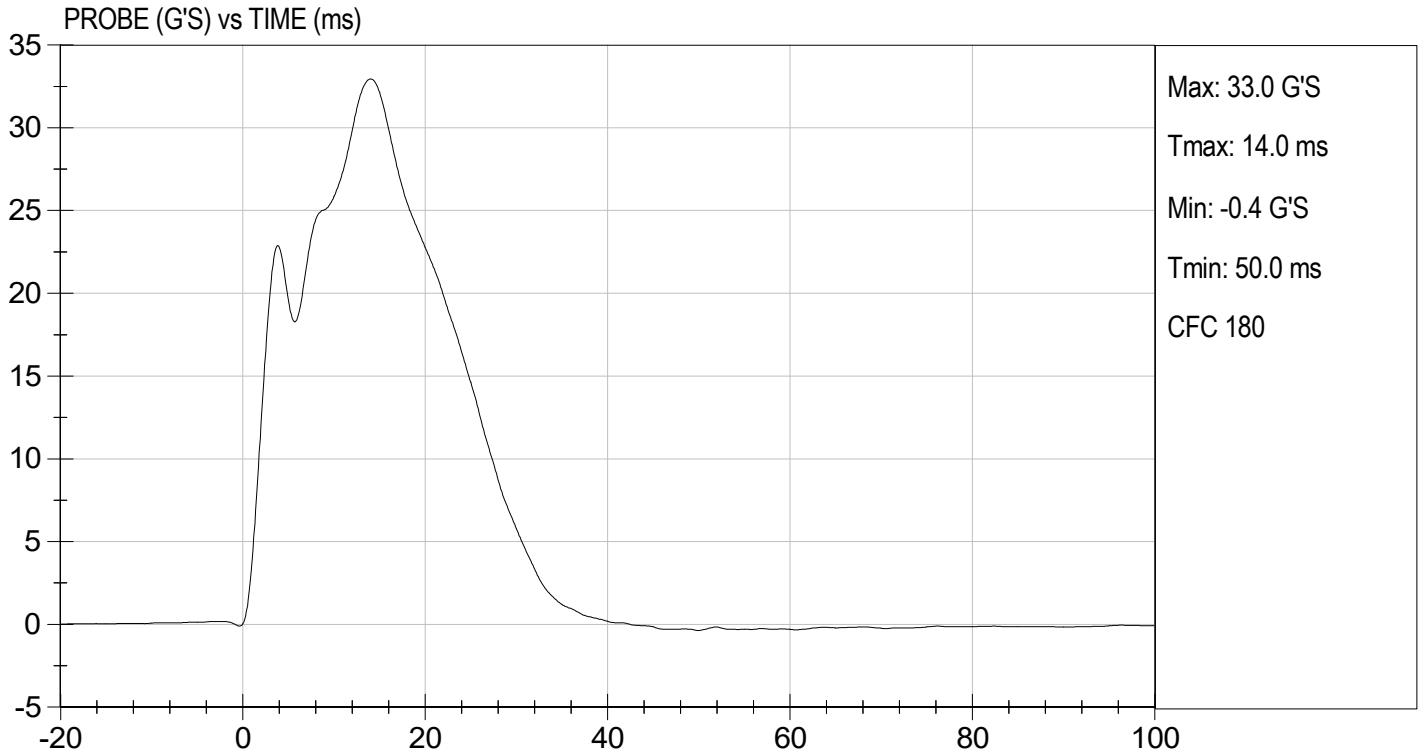
07/15/2023
Test Date


Approved By



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

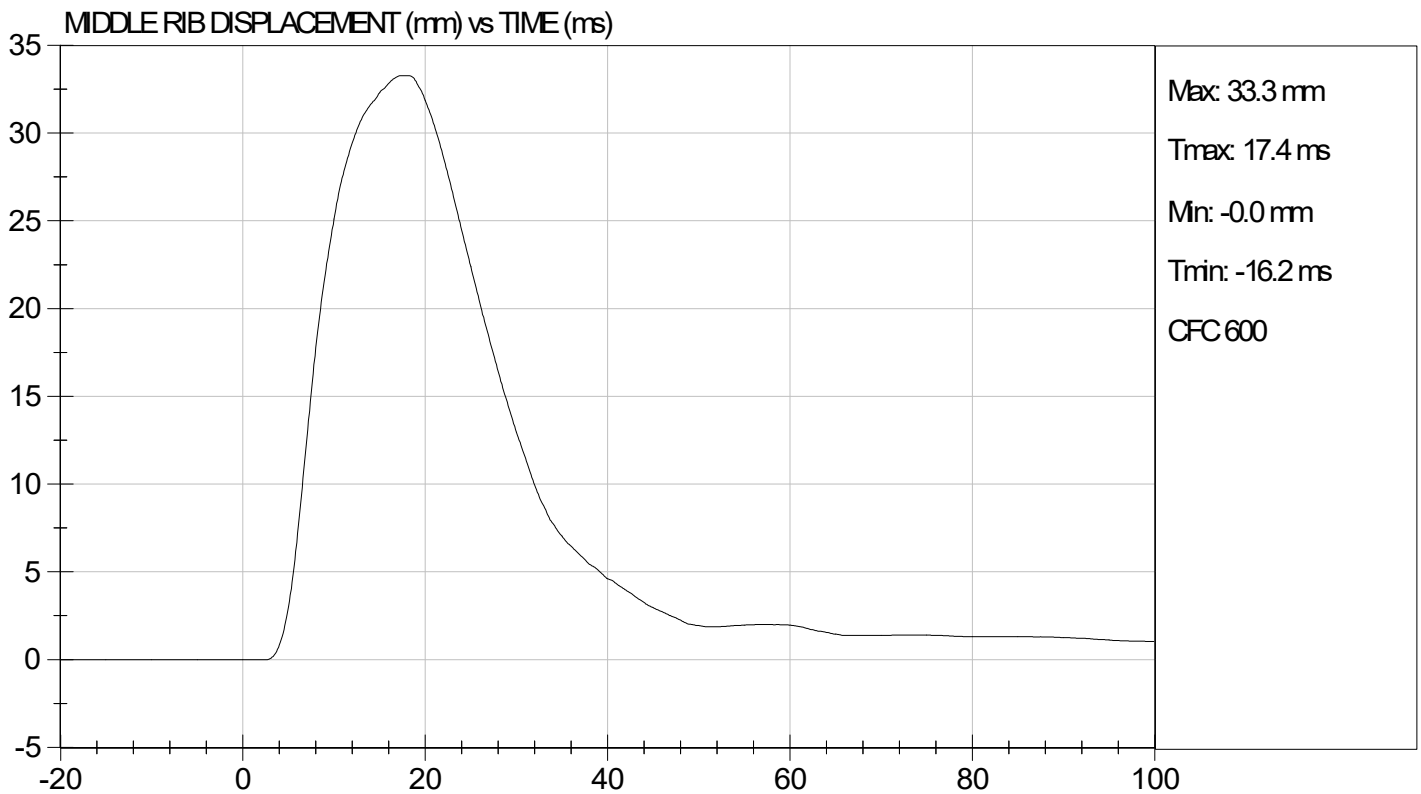
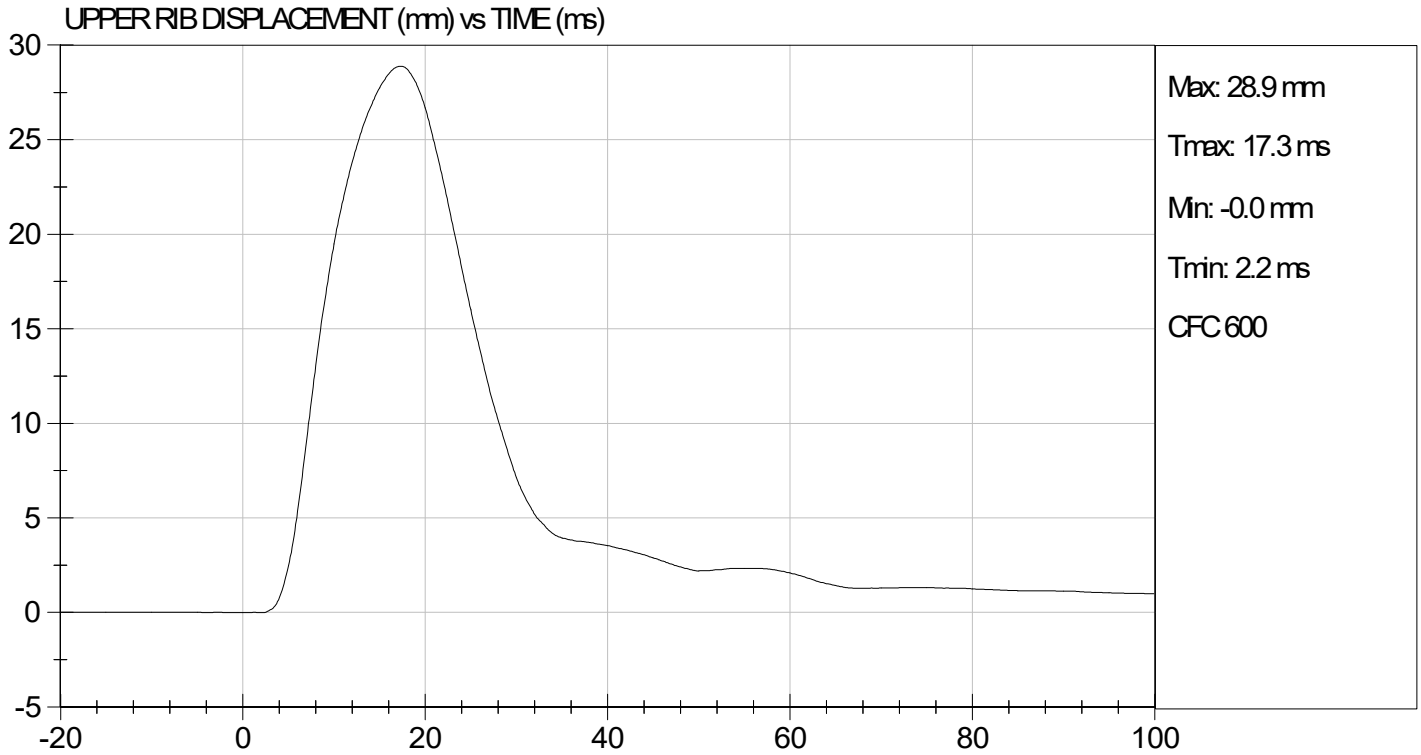
TEST DATE: 07/15/2023
TEST #: D231774





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

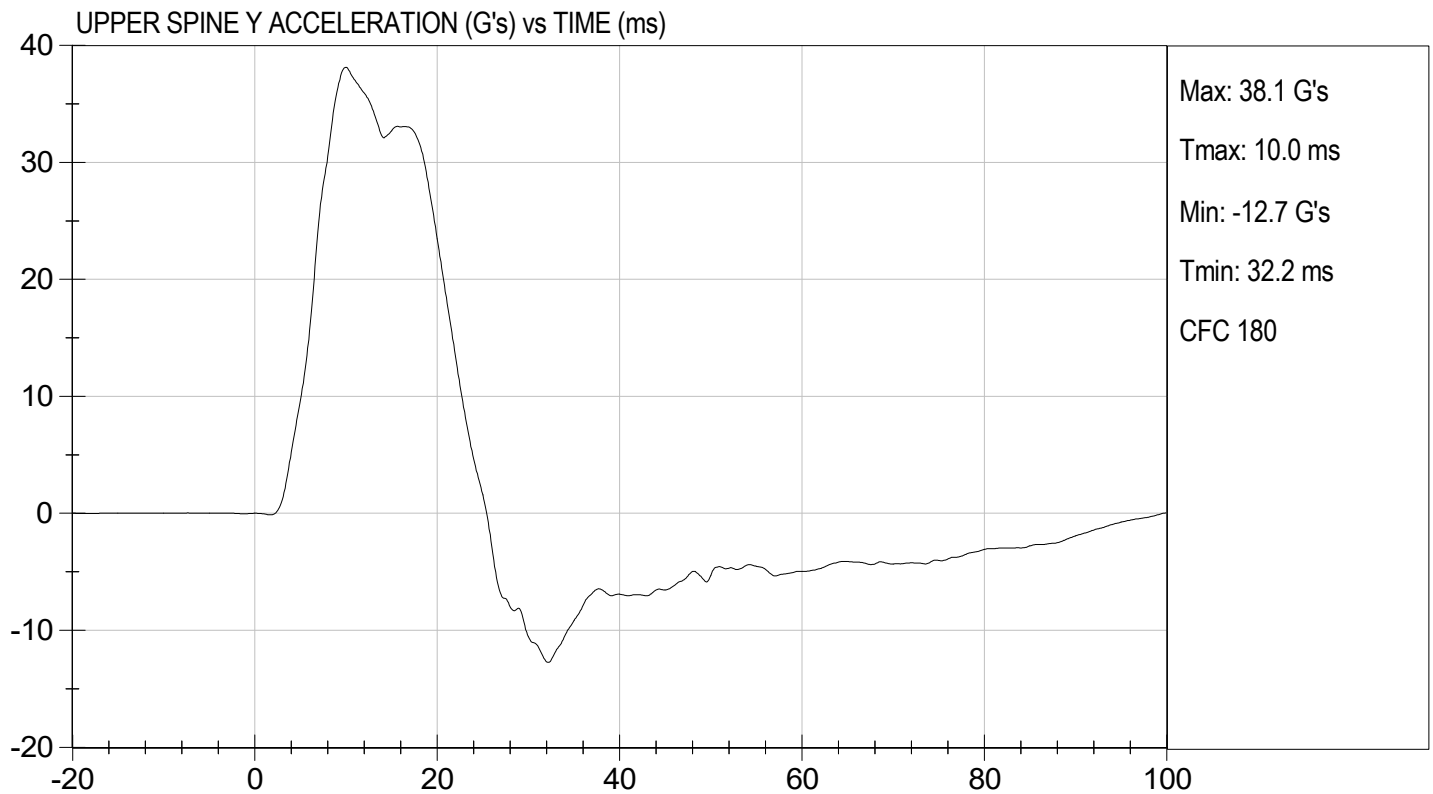
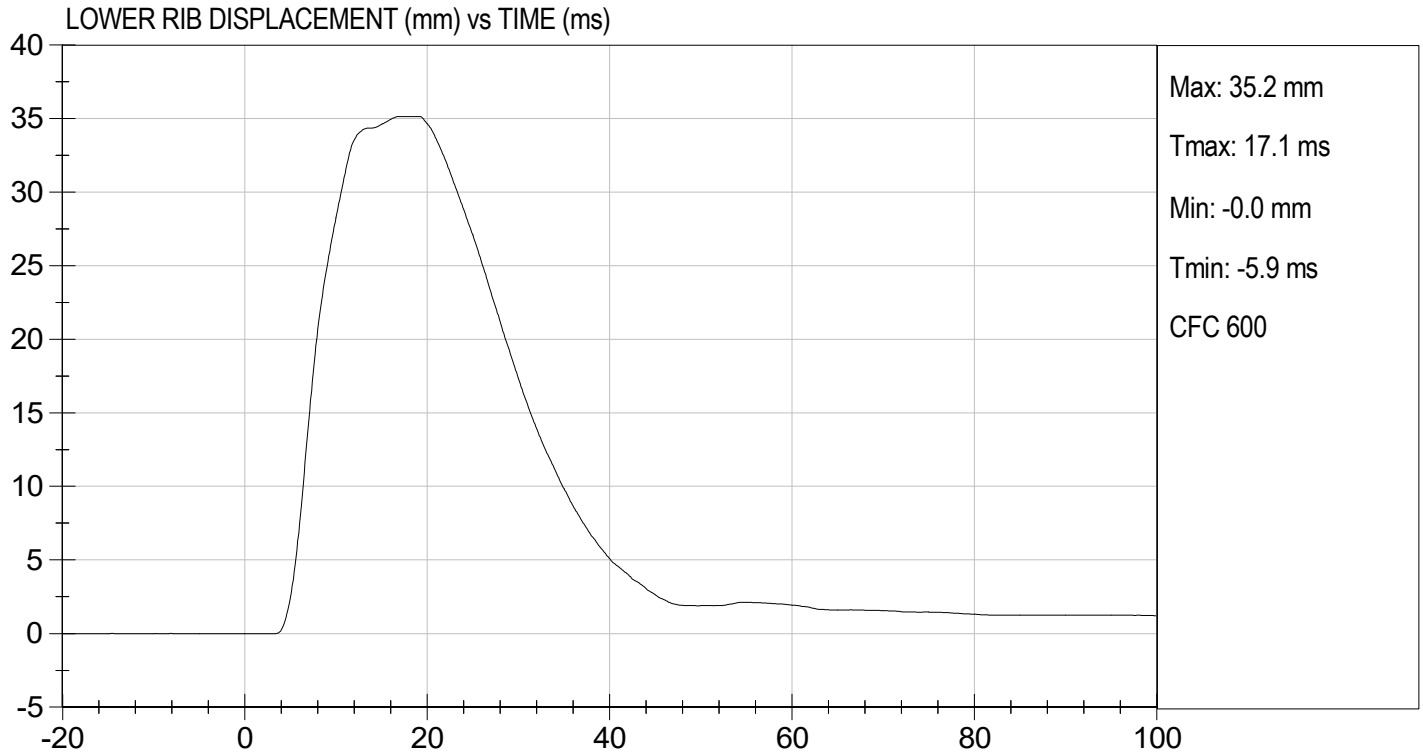
TEST DATE: 07/15/2023
TEST #: D231774





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

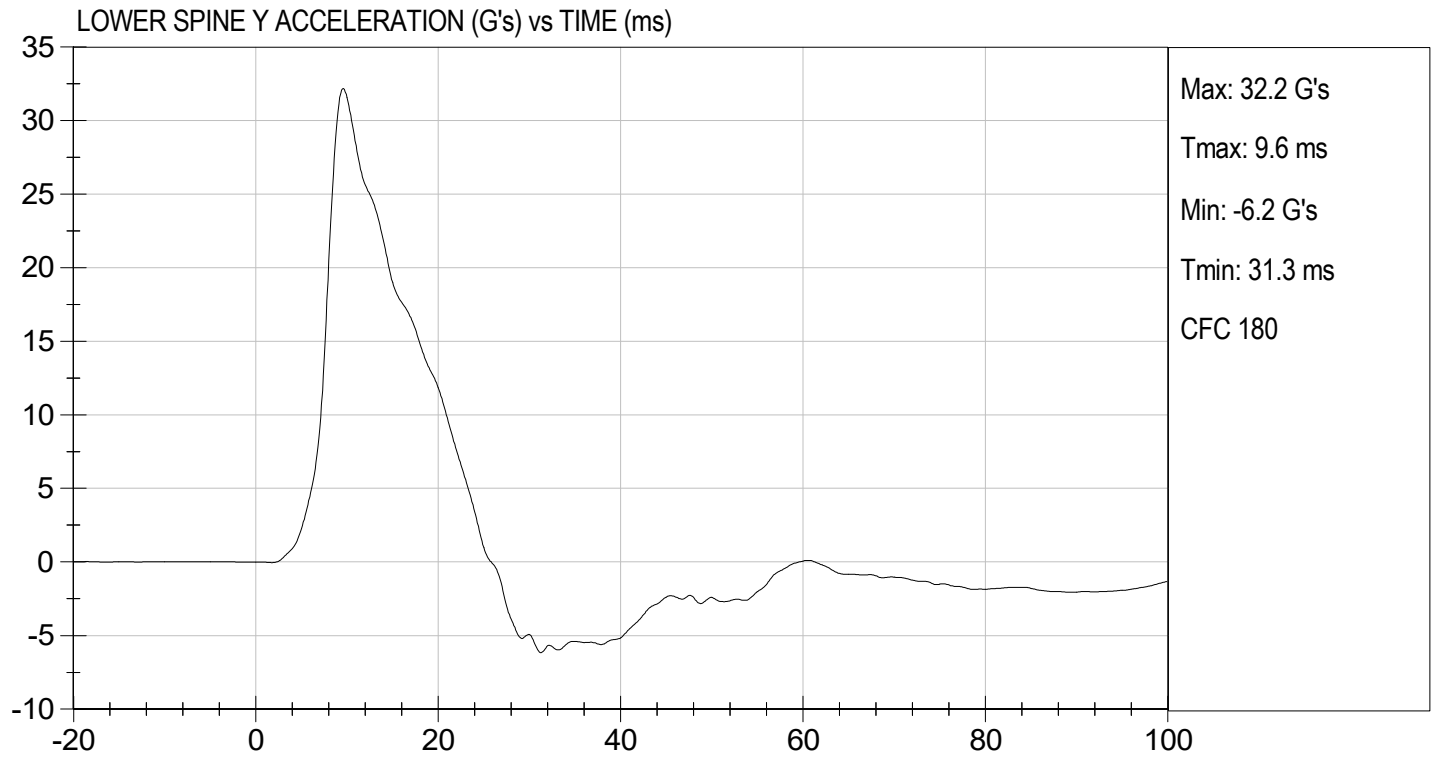
TEST DATE: 07/15/2023
TEST #: D231774





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/15/2023
TEST #: D231774



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

ATD Serial No: 296

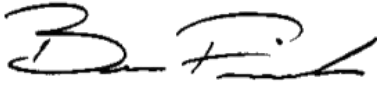
Test I.D: D231775

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	14 to 18	16	Pass
Upper Rib Displacement	mm	32 to 40	37	Pass
Middle Rib Displacement	mm	39 to 45	44	Pass
Lower Rib Displacement	mm	35 to 43	41	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


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07/15/2023

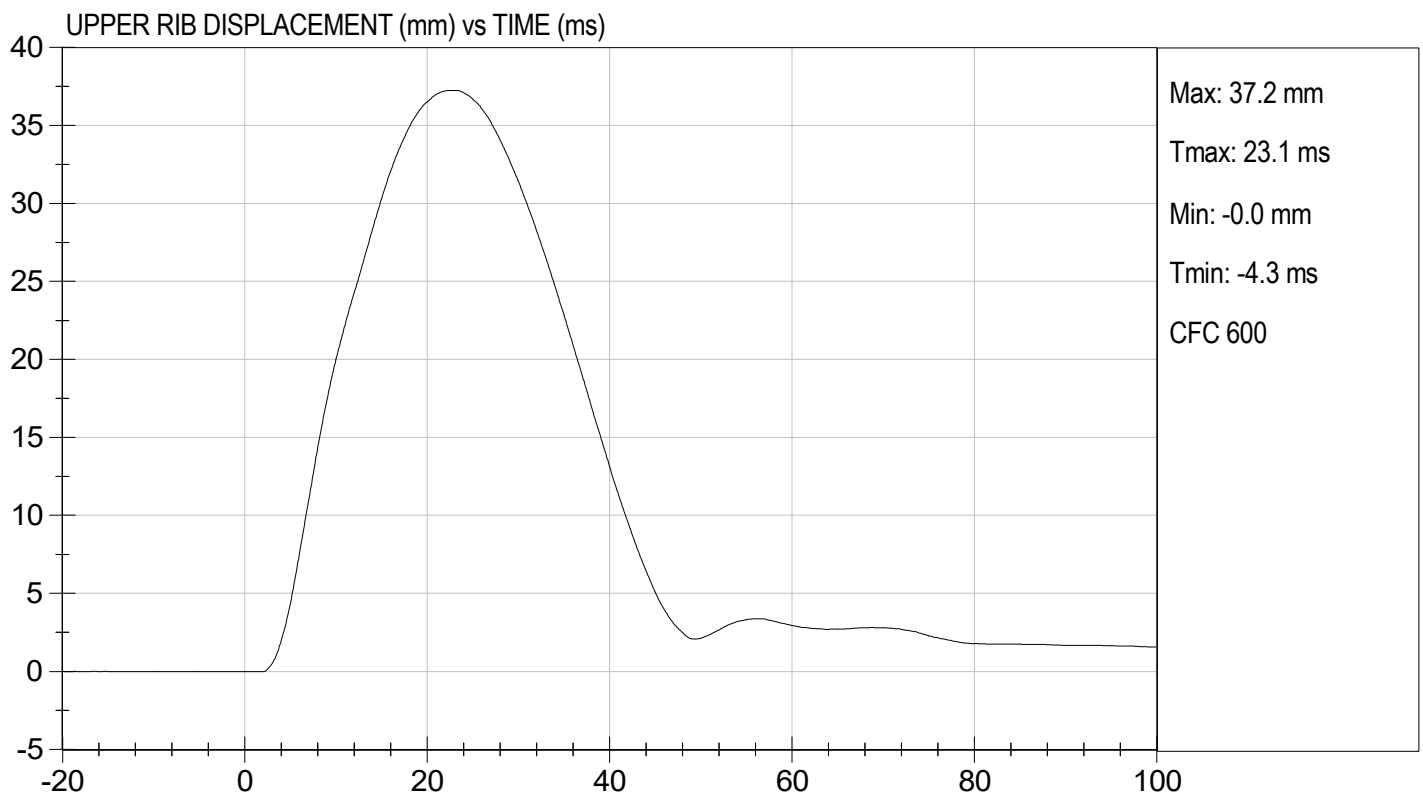
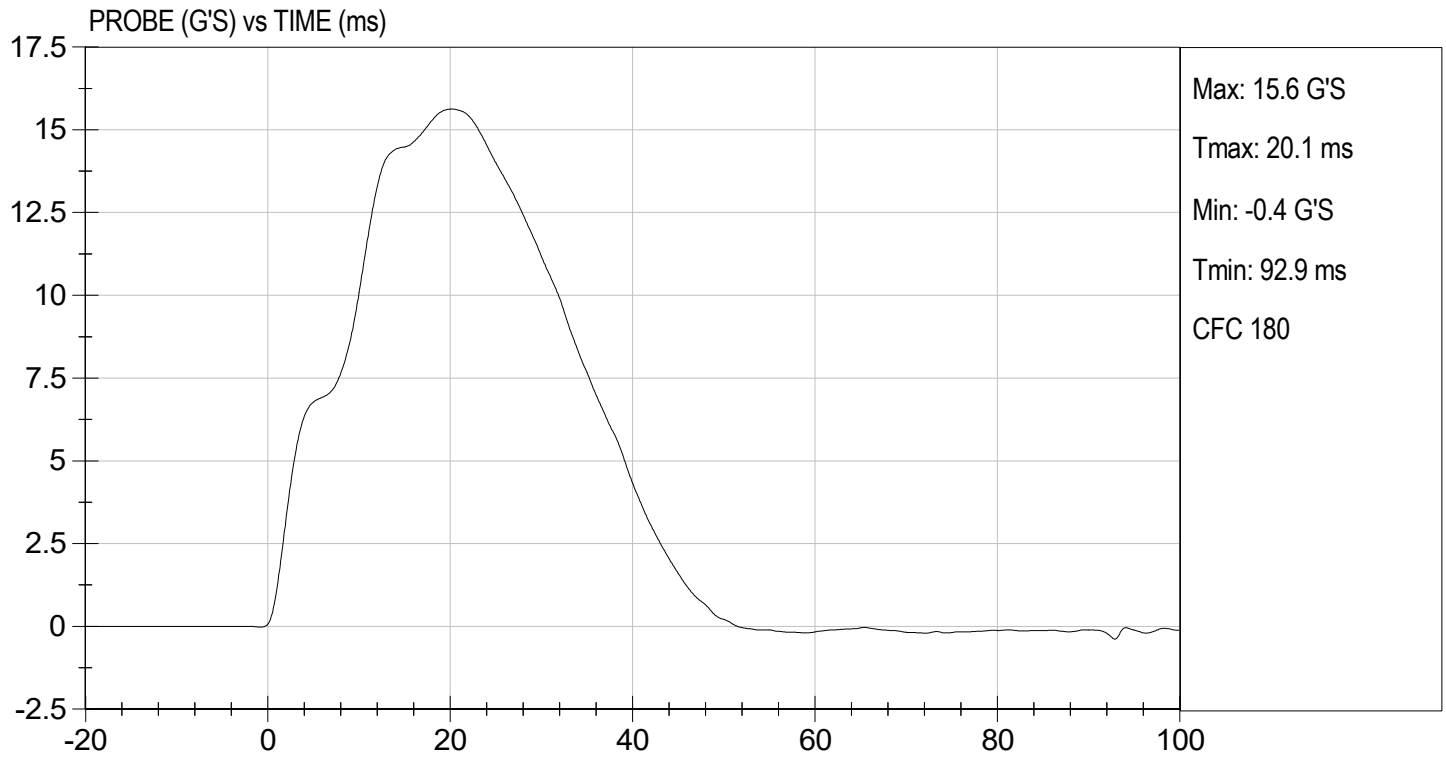
Test Date


Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.24 ft/s, 4.34 m/s

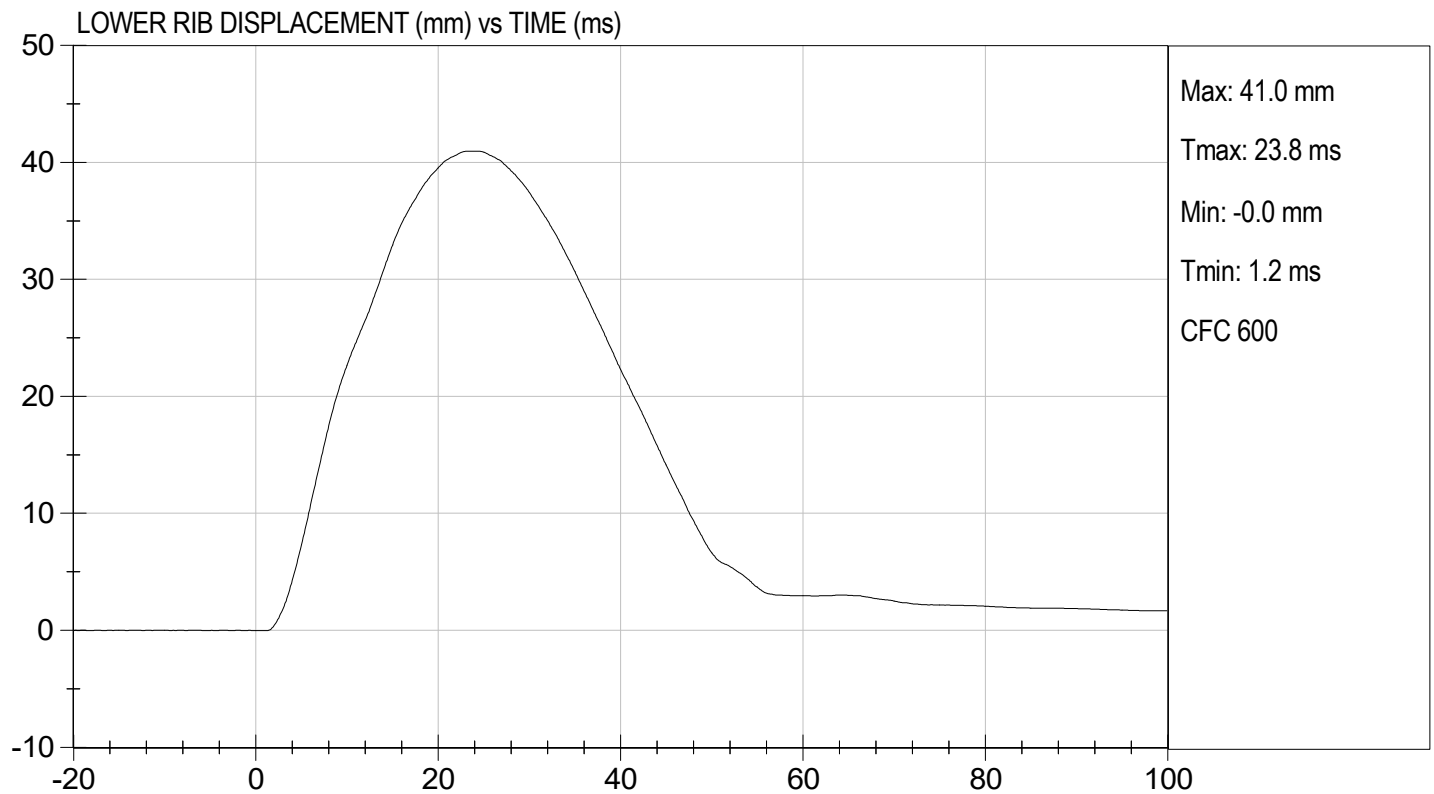
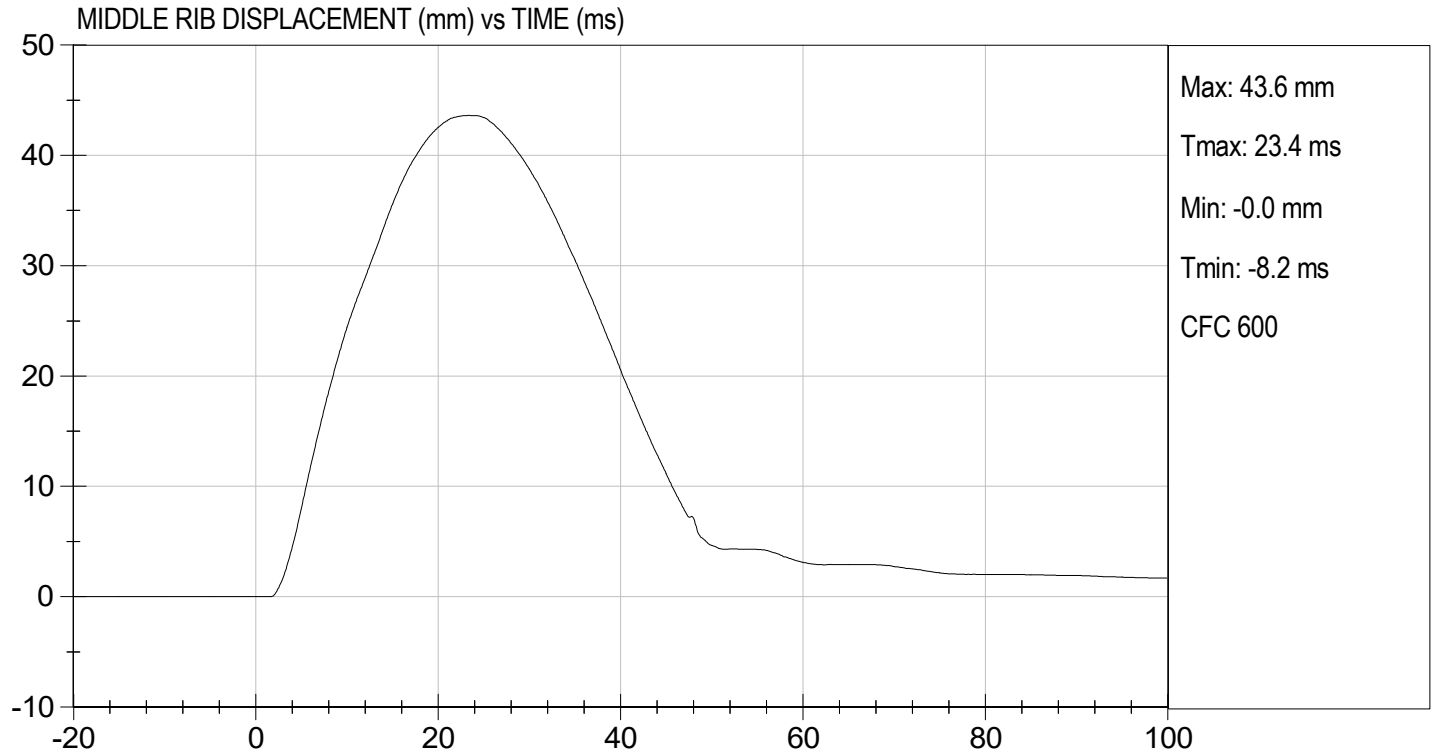
TEST DATE: 07/15/2023
TEST #: D231775





TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.24 ft/s, 4.34 m/s

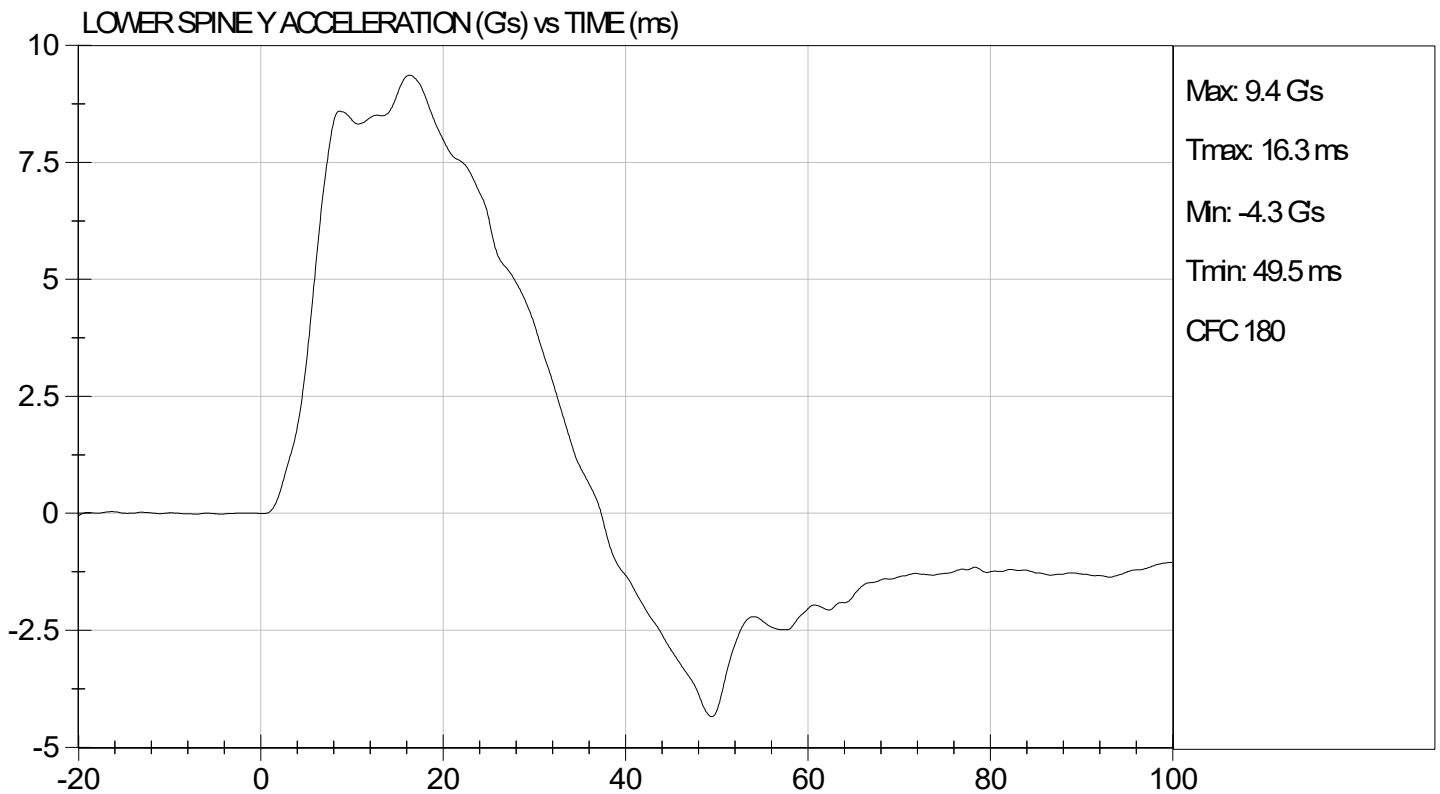
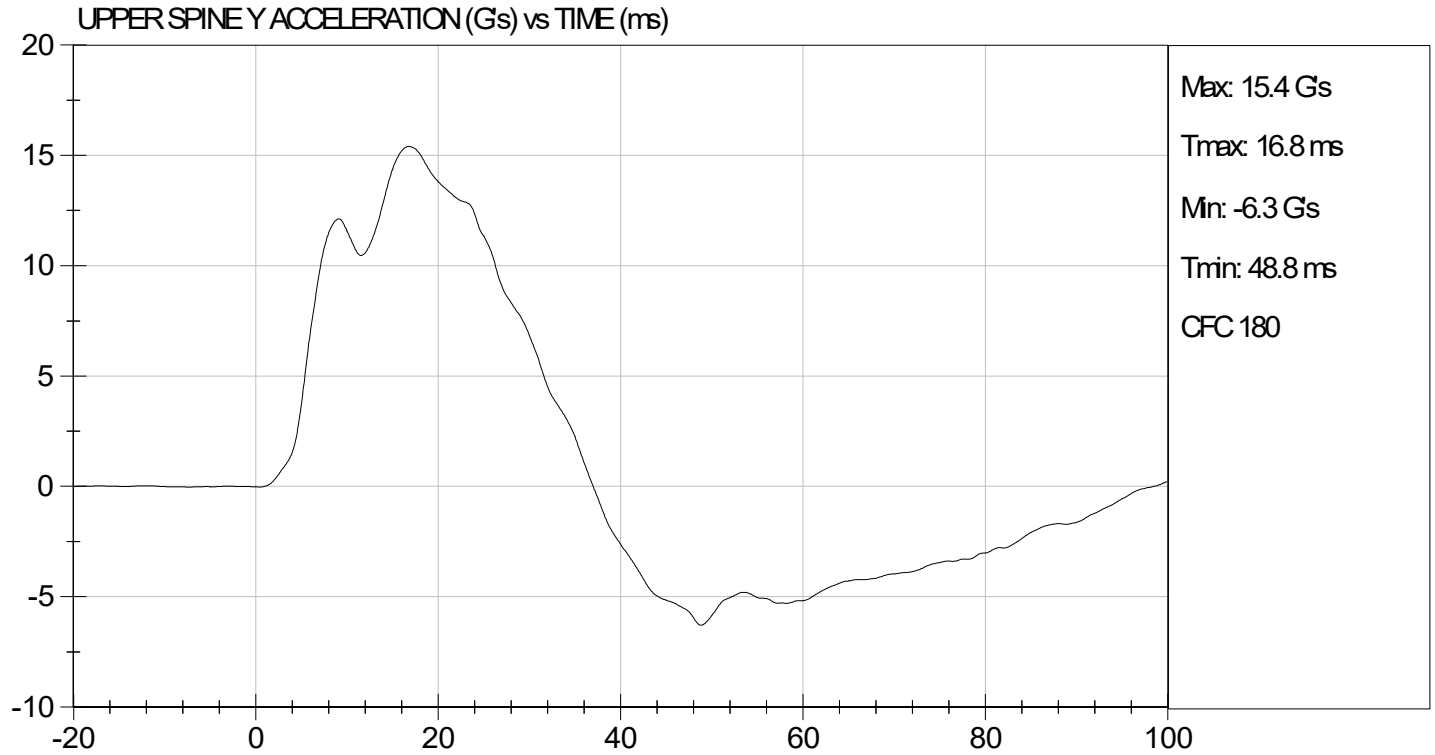
TEST DATE: 07/15/2023
TEST #: D231775





TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.24 ft/s, 4.34 m/s

TEST DATE: 07/15/2023
TEST #: D231775



MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-11s BUILD LEVEL D DUMMY

ATD Serial No: 296

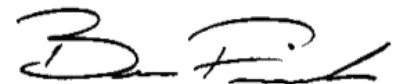
Test I.D: D231776

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	12 to 16	14	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	43	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	39	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass


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07/15/2023

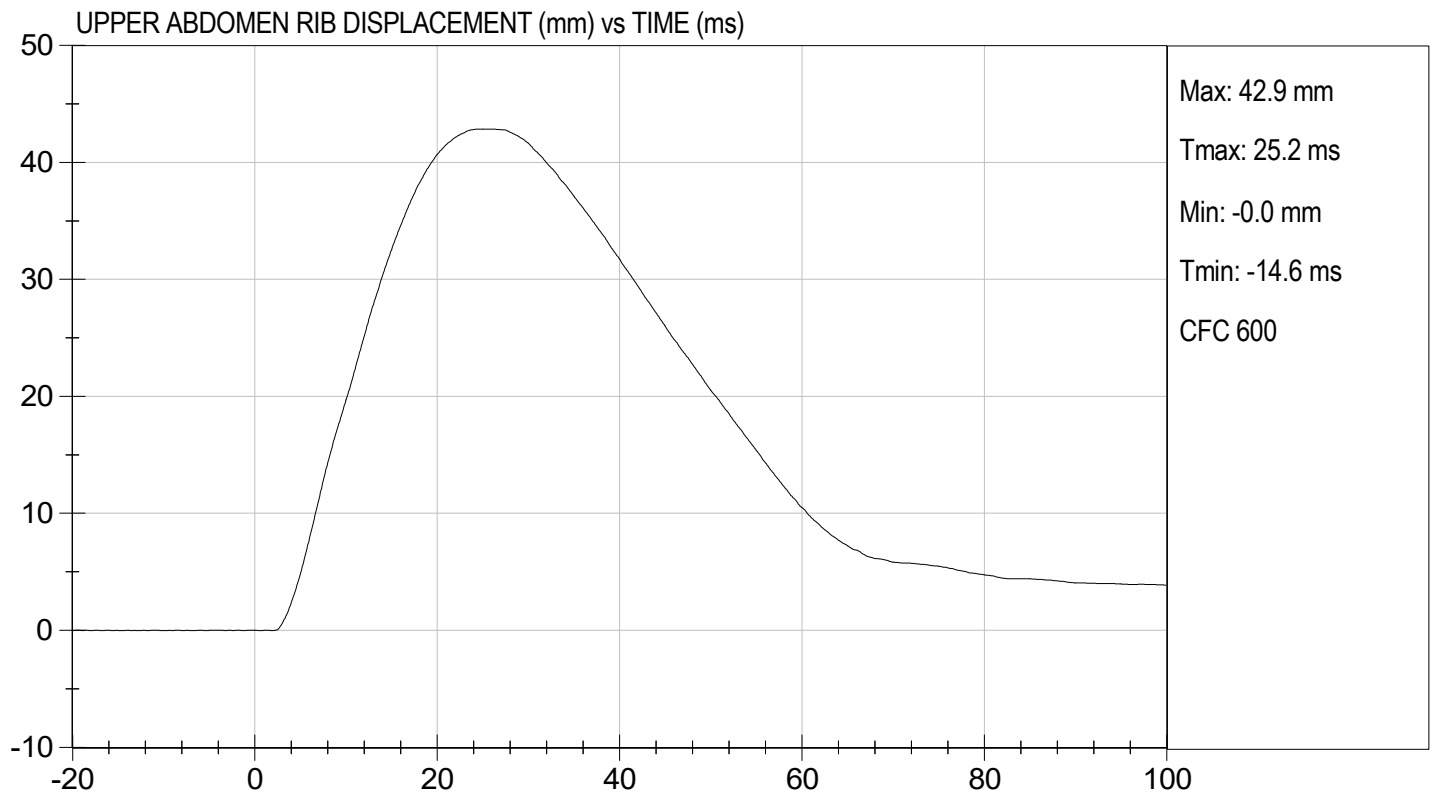
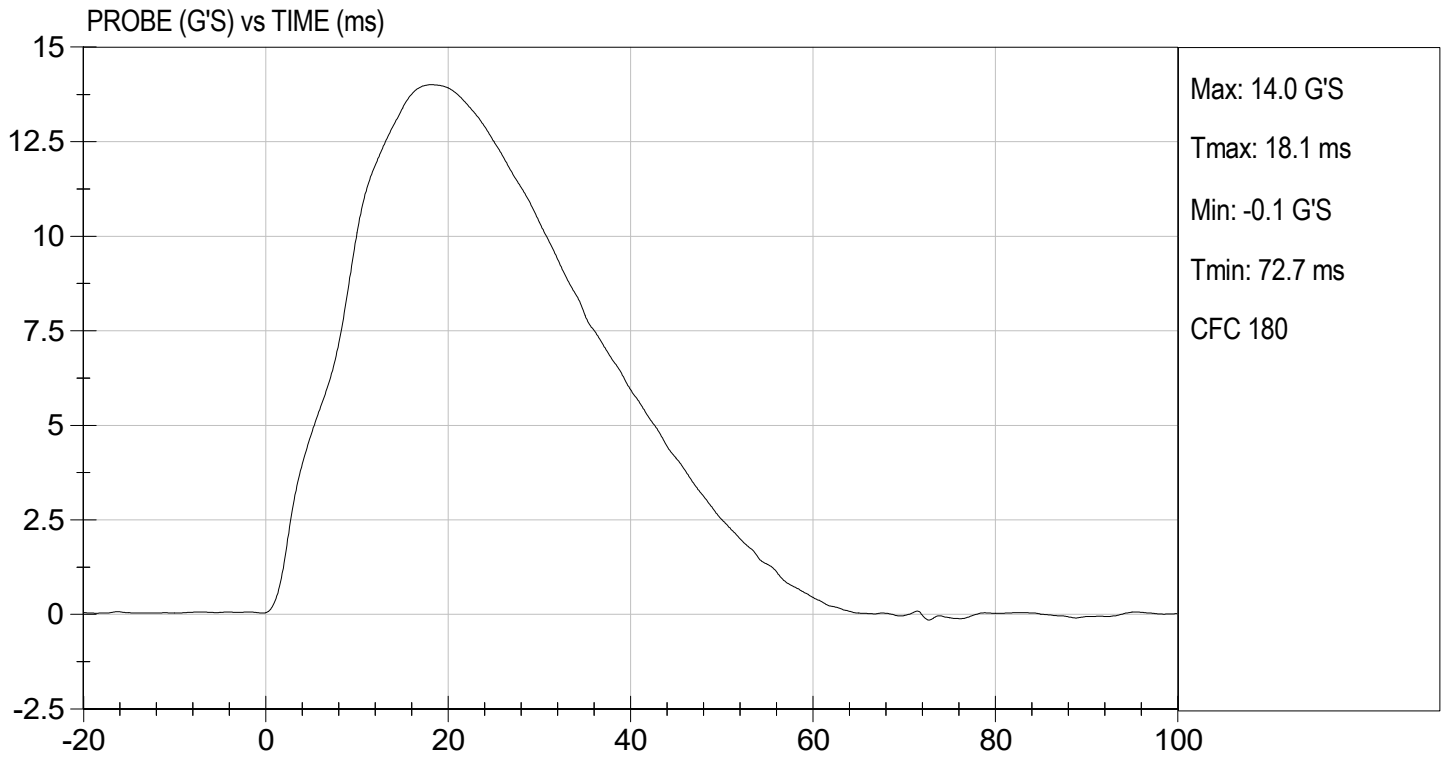
Test Date


Approved By



TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

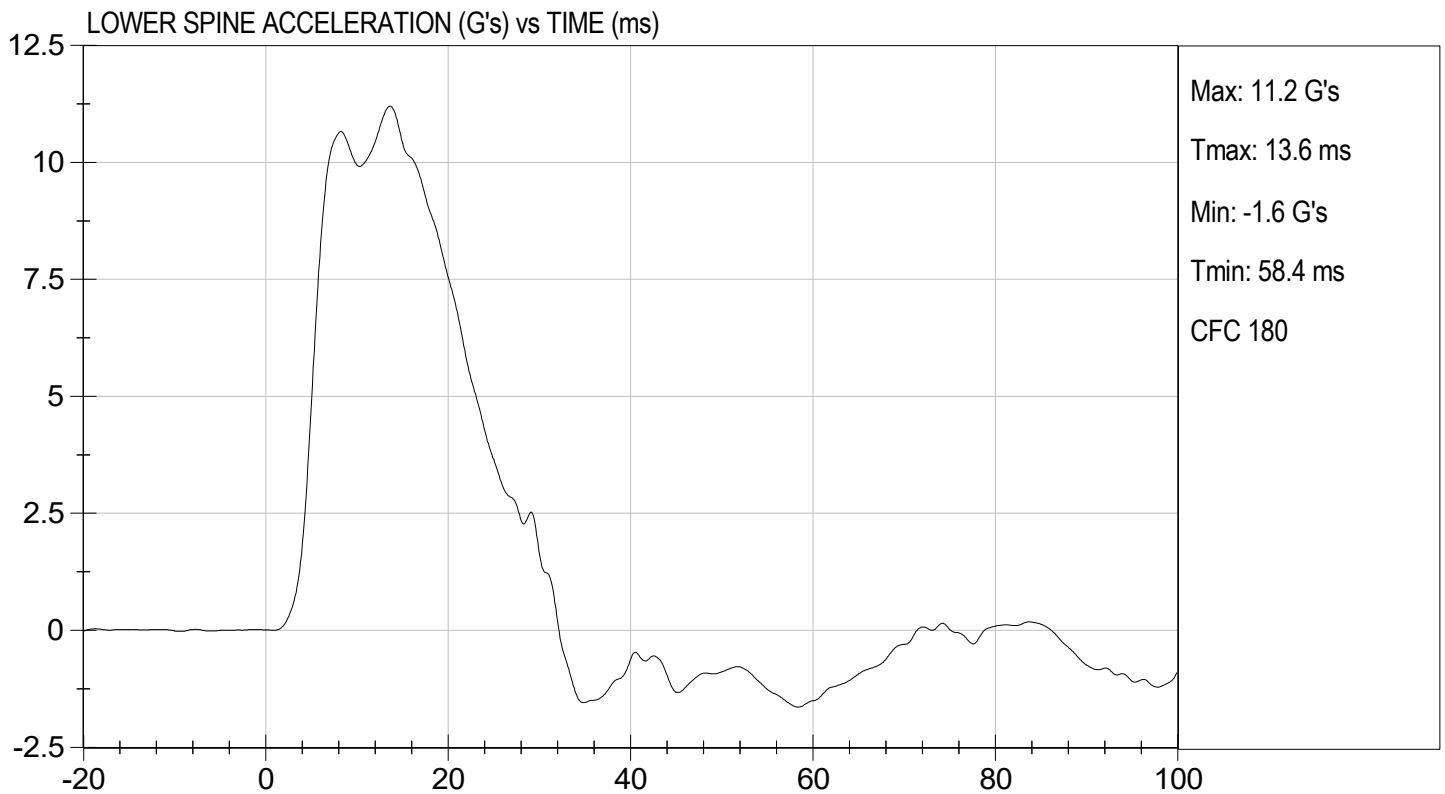
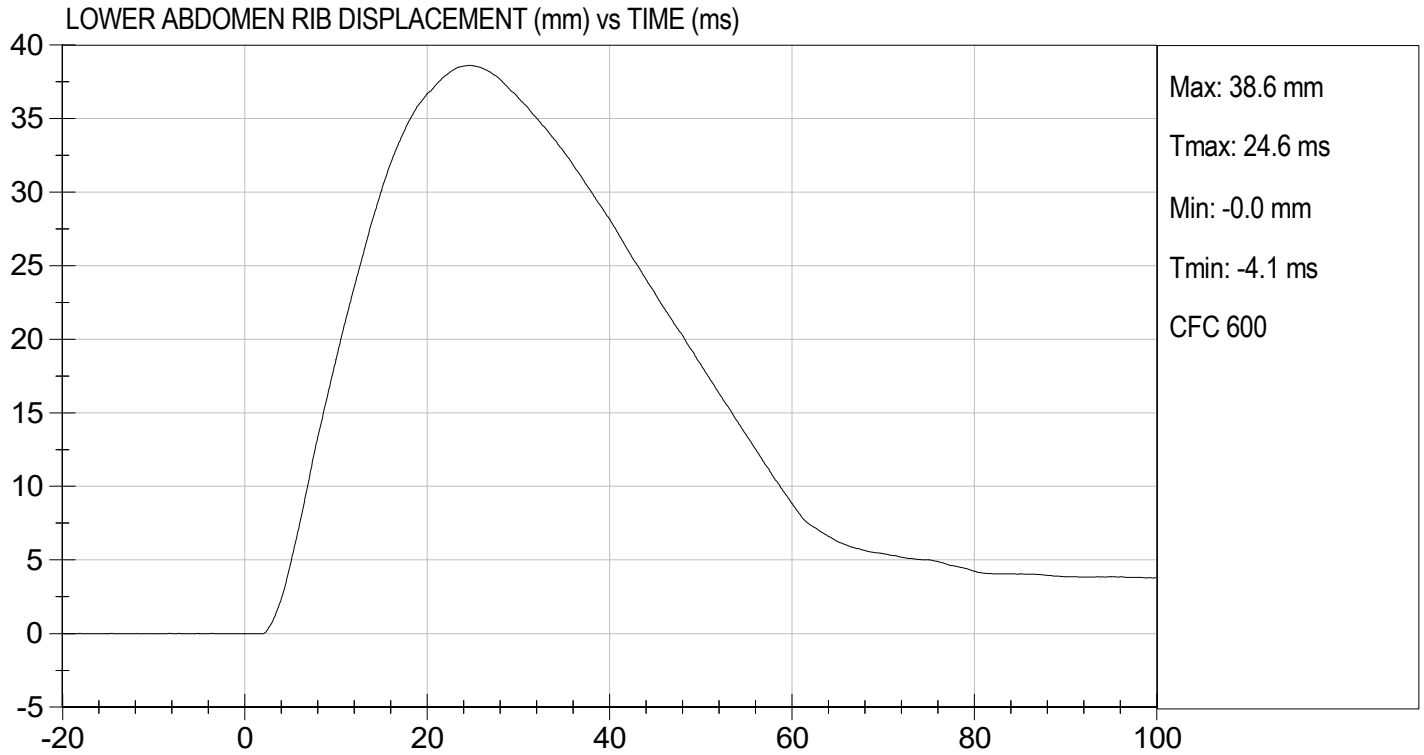
TEST DATE: 07/15/2023
TEST #: D231776





TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/15/2023
TEST #: D231776



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

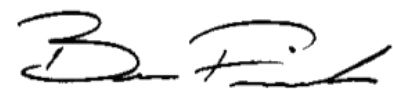
Test I.D: D231777

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	38 to 47	41	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	39.0	Pass
Peak Acetabulum Force	N	3600 to 4300	3,873	Pass
Overall Test Results				Pass


Laboratory Technician

07/15/2023

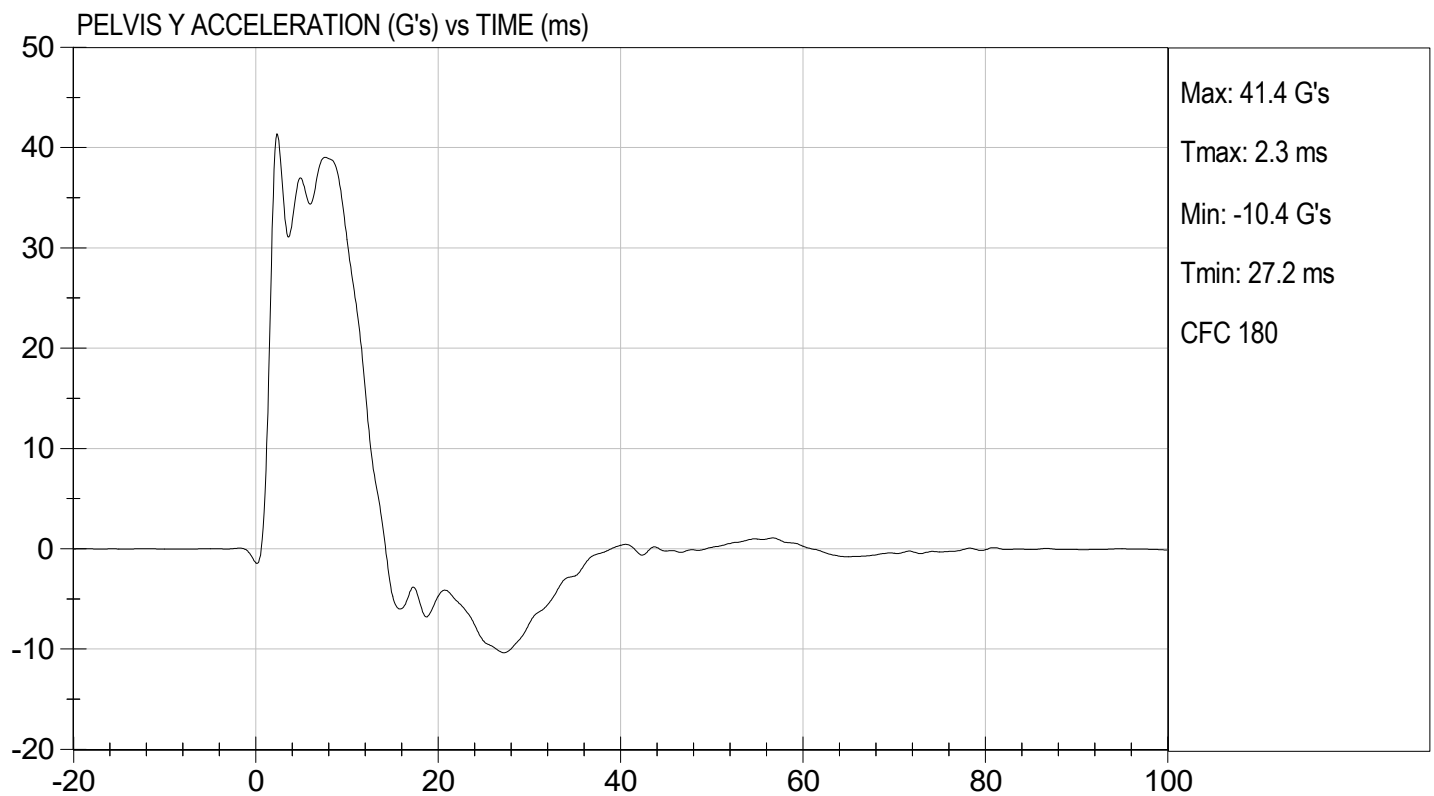
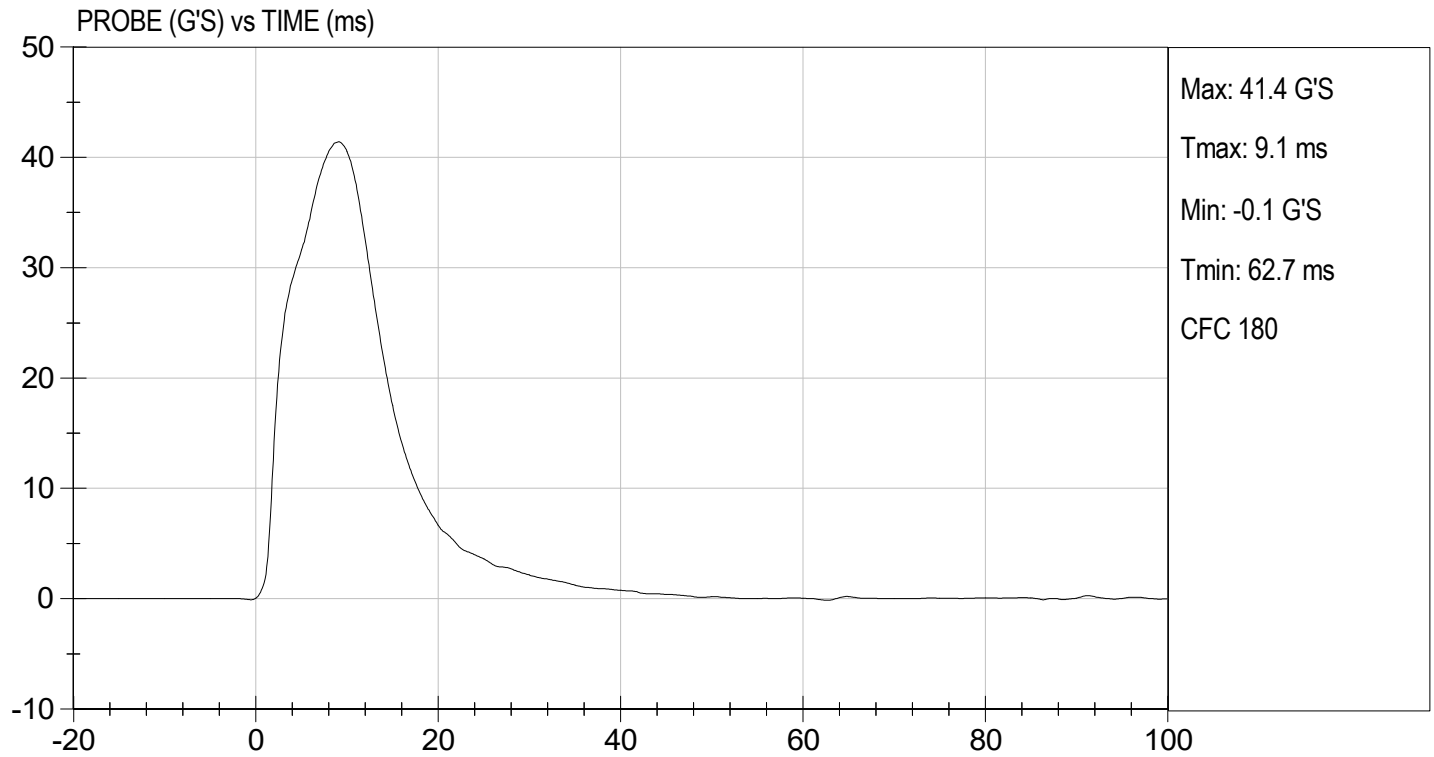
Test Date


Approved By



TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

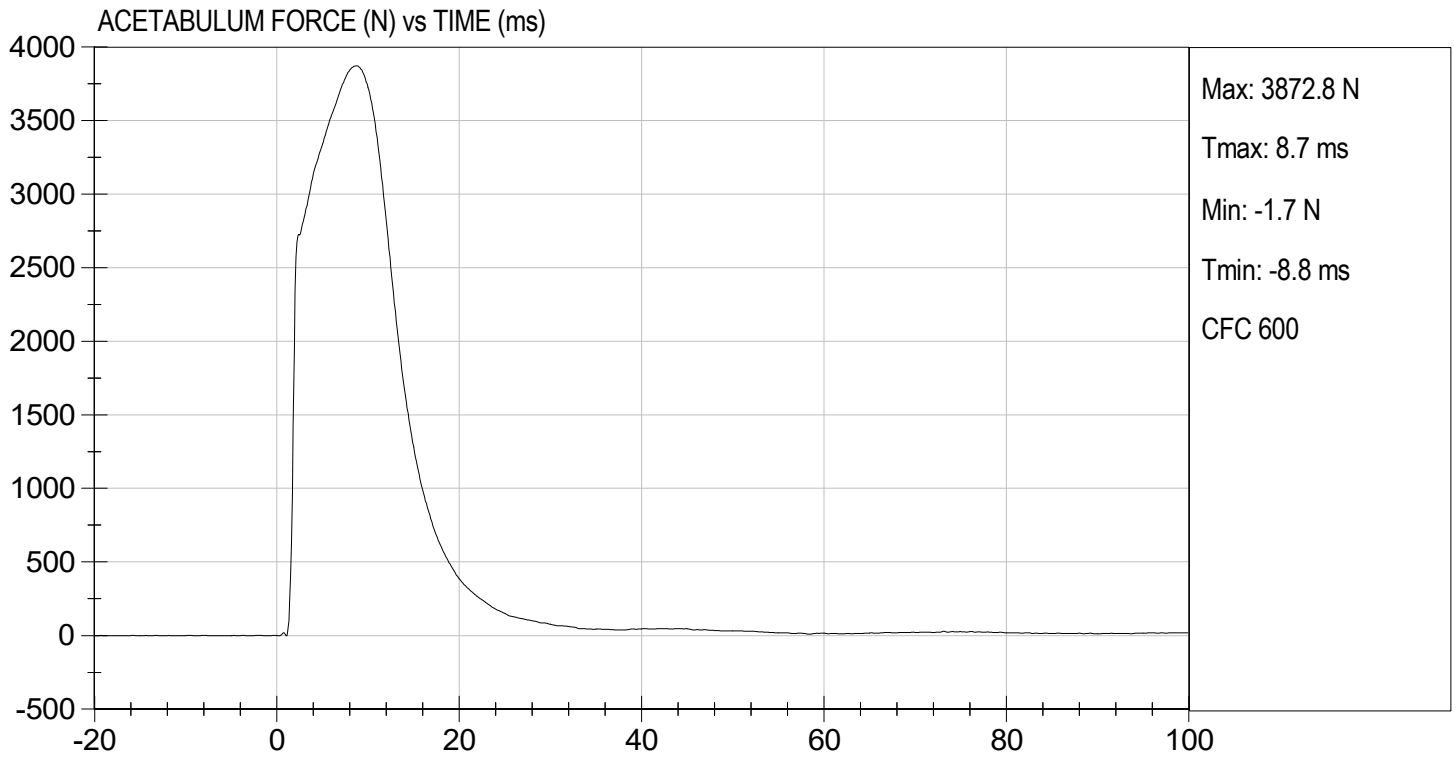
TEST DATE: 07/15/2023
TEST #: D231777





TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/15/2023
TEST #: D231777



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

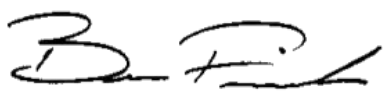
Test I.D: D231778

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	36 to 45	42	Pass
Pelvis Y Acceleration	G's	28 to 39	36	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	5,056	Pass
Overall Test Results				Pass


Laboratory Technician

07/15/2023

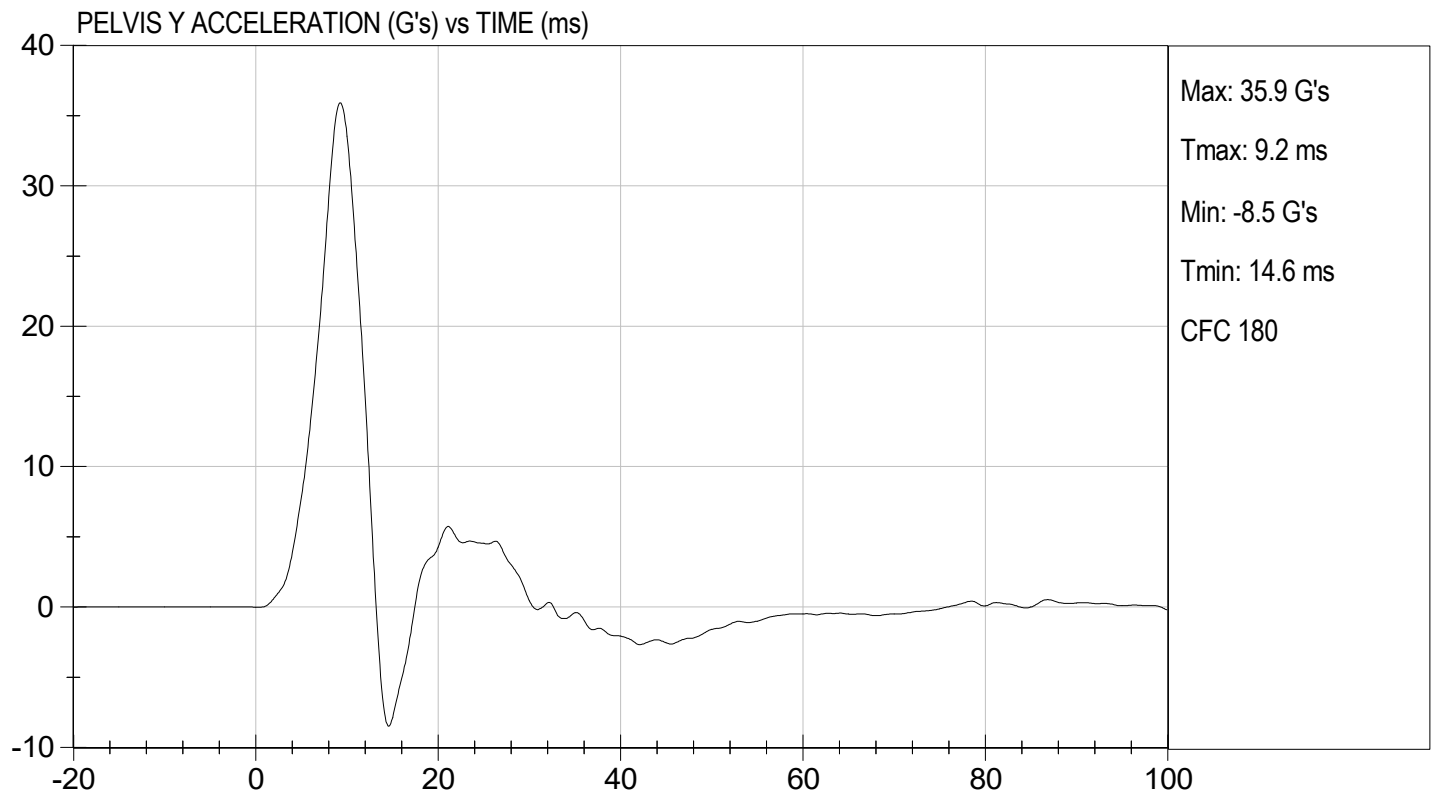
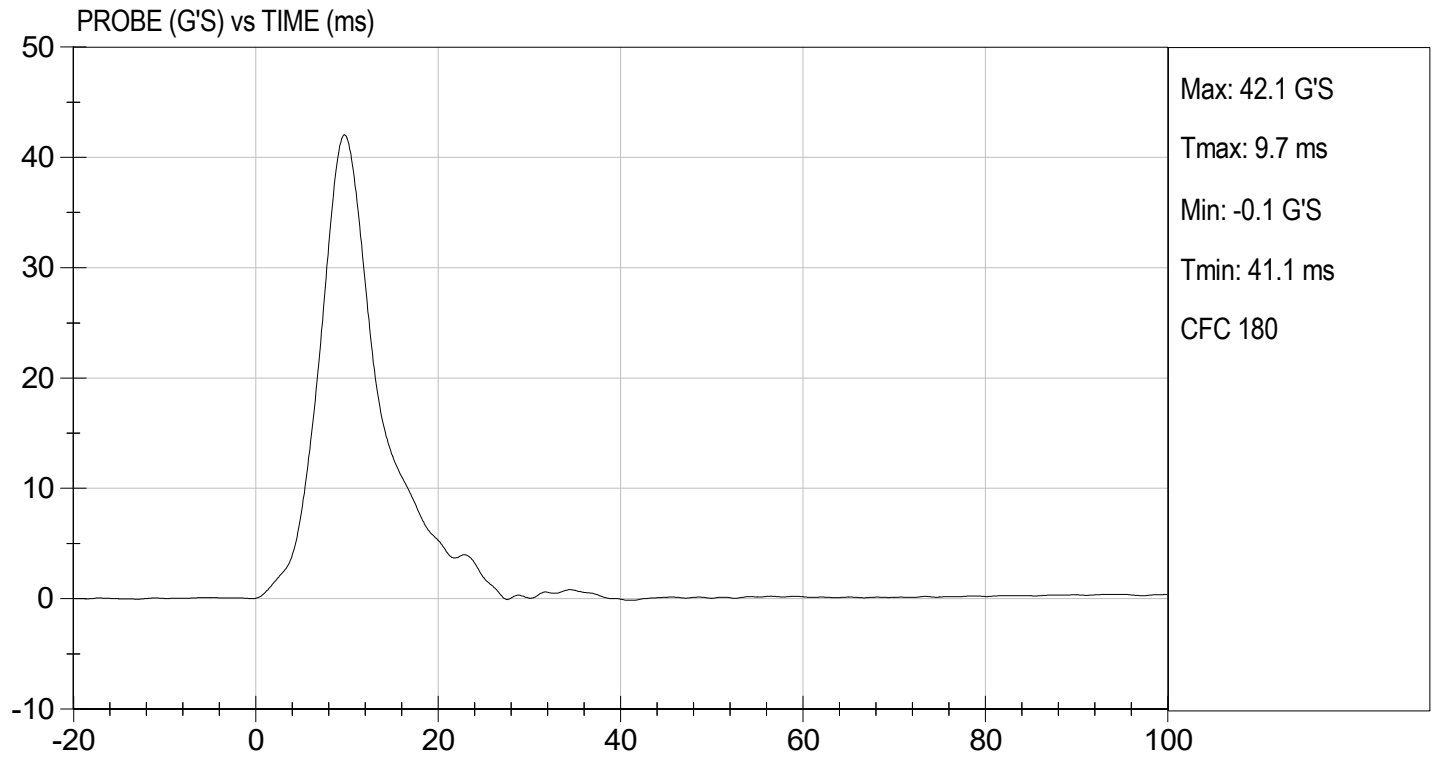
Test Date


Approved By



TEST DESC: ILLIAC
VELOCITY: 14.12 ft/s, 4.30 m/s

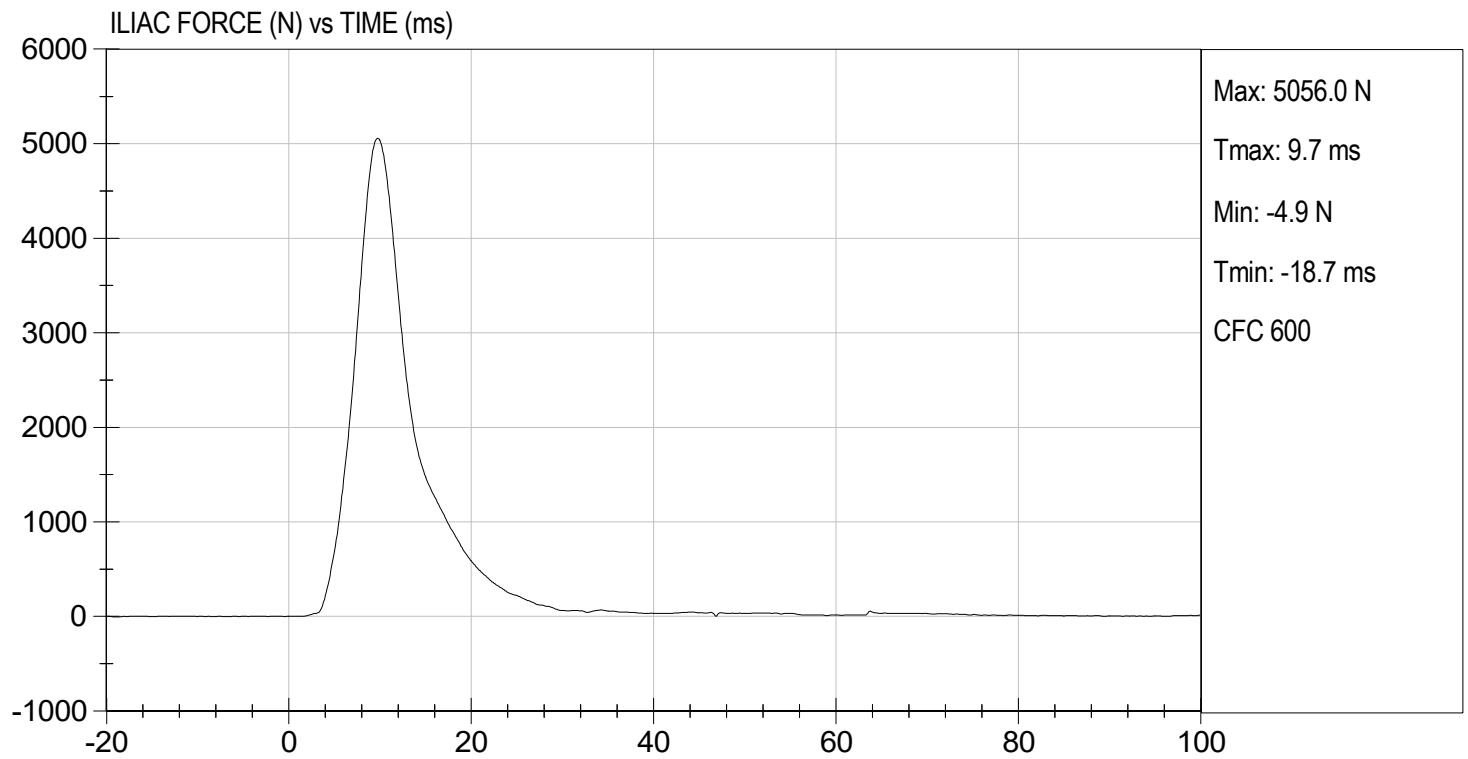
TEST DATE: 07/15/2023
TEST #: D231778





TEST DESC: ILLIAC
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 07/15/2023
TEST #: D231778



QUALIFICATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - DRIVER ATD

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

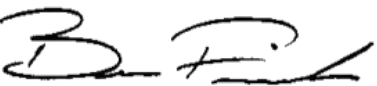
Test ID: D231971

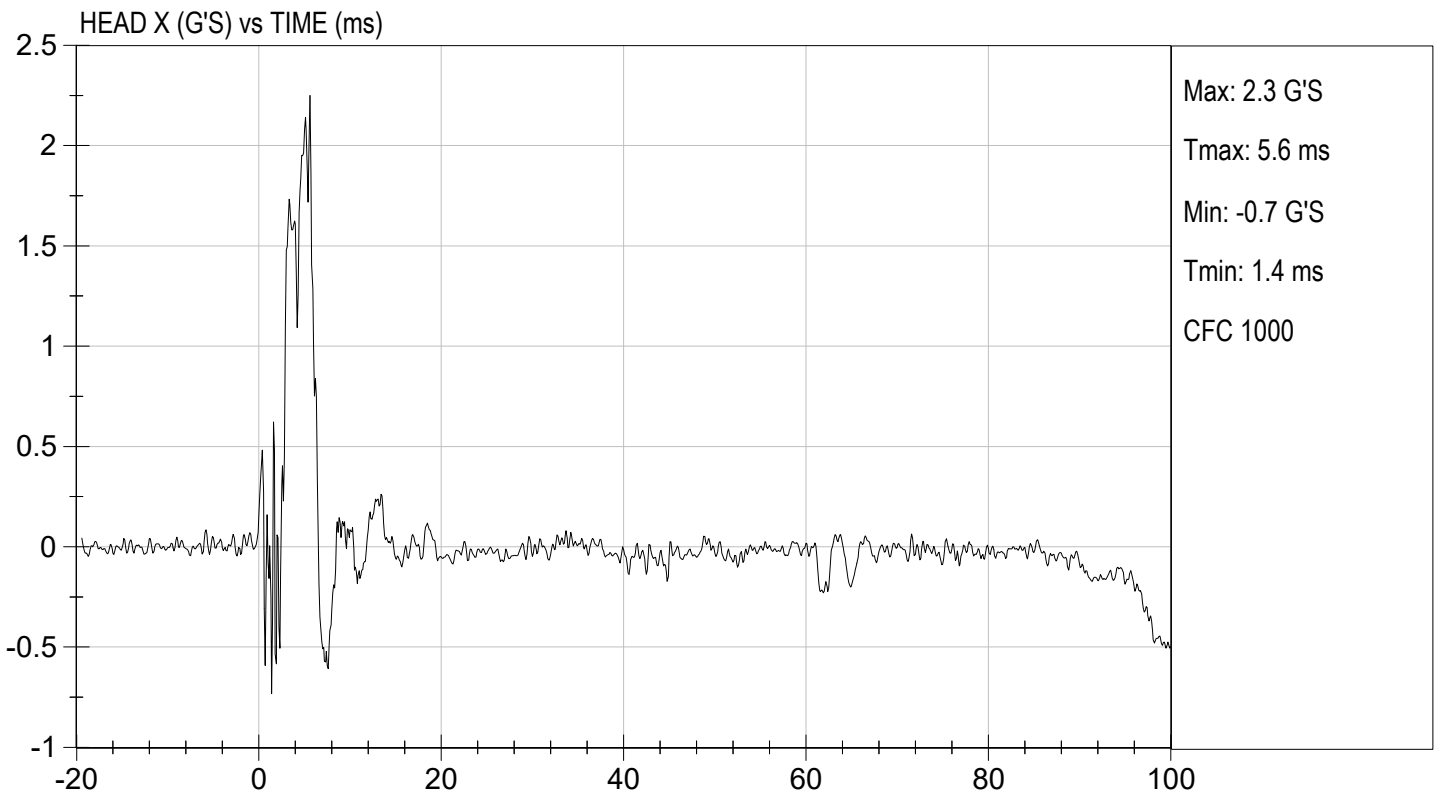
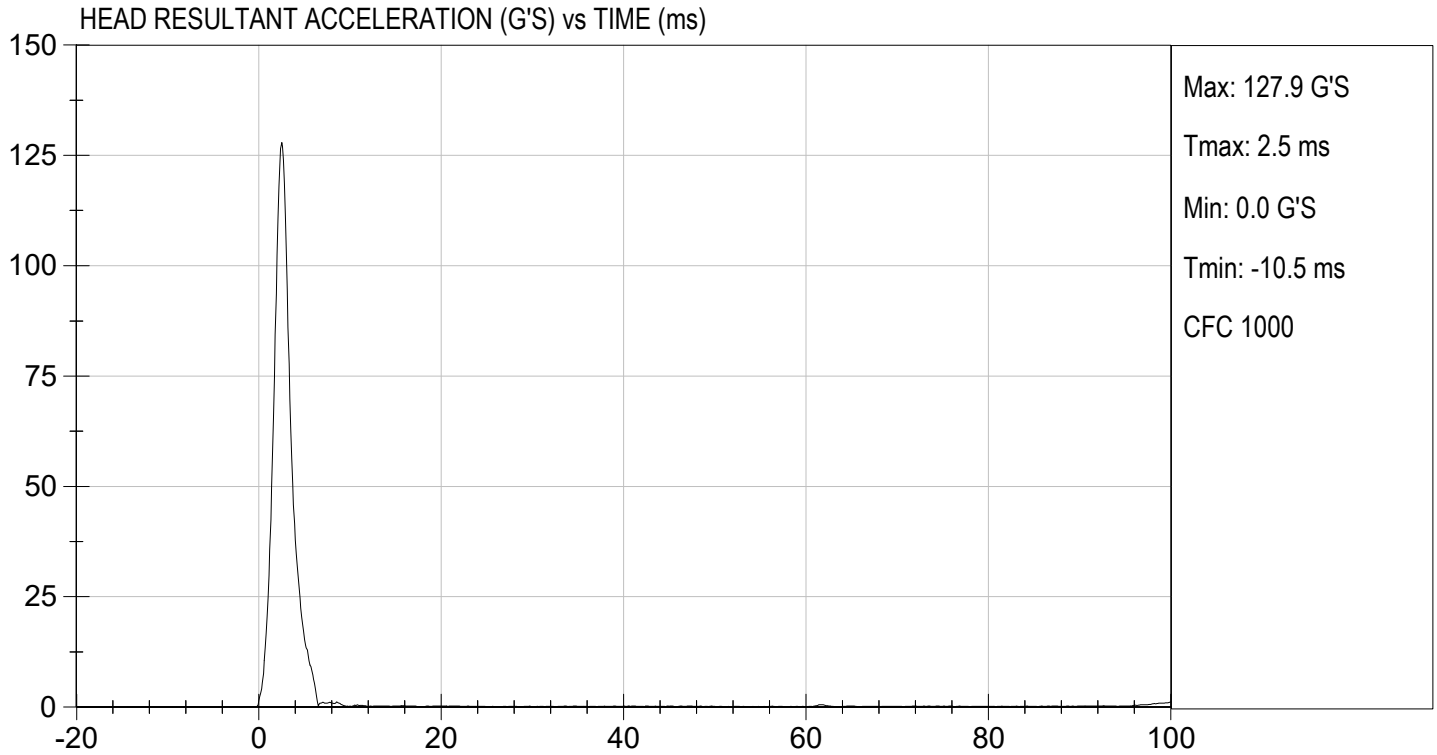
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Peak Resultant Acceleration	G's	115 to 137	128	Pass
Peak Longitudinal Acceleration	G's	+/- 15	2.3	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
			Overall Test Results	Pass

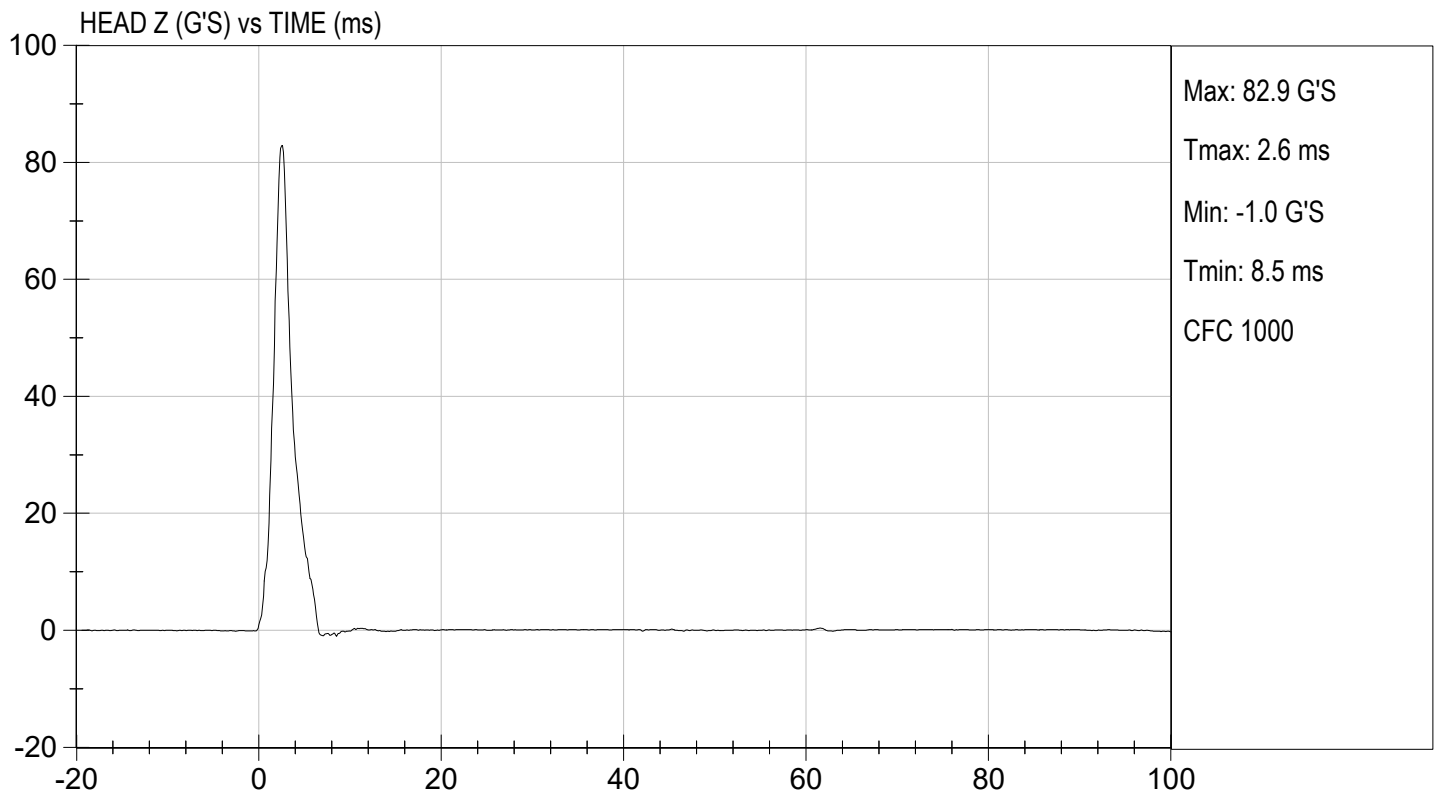
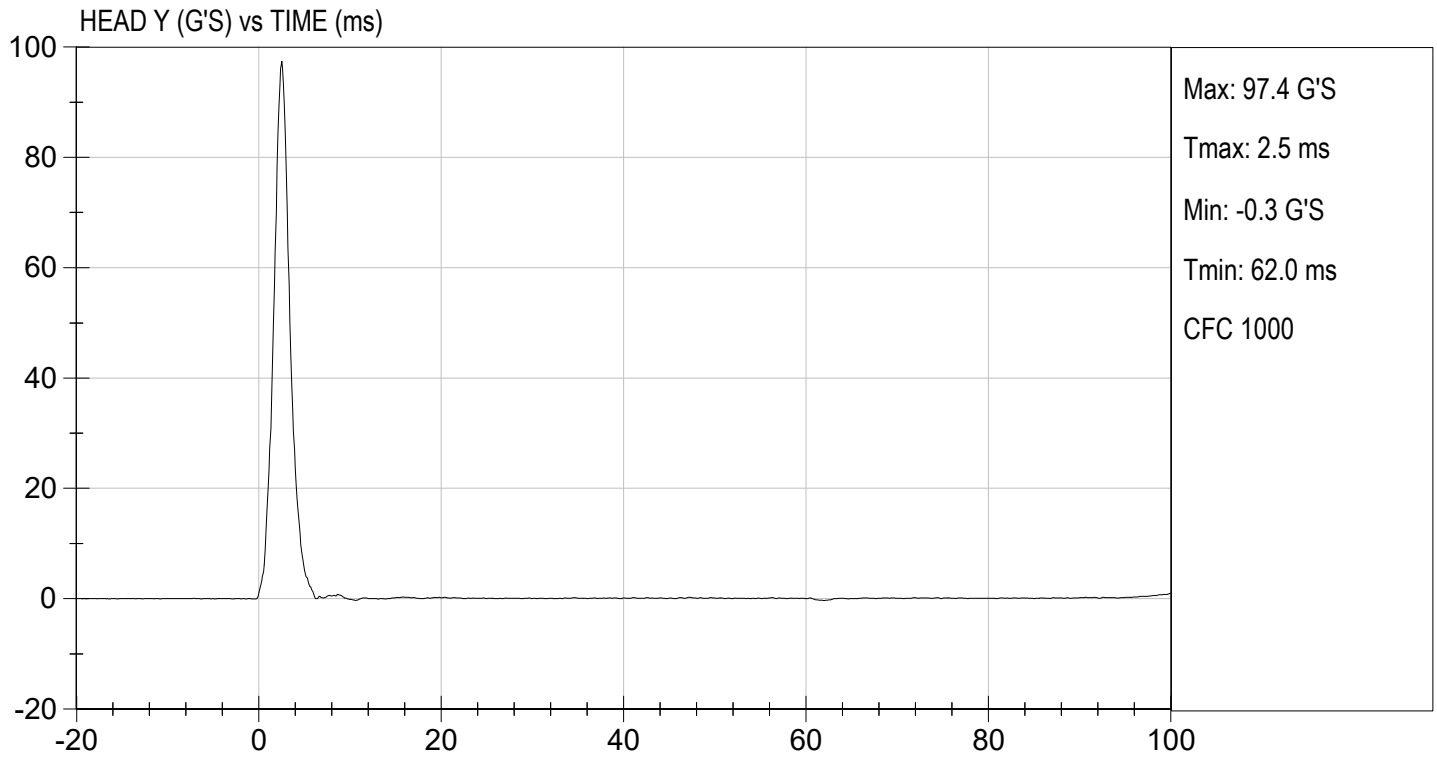

Laboratory Technician

07/28/2023

Test Date


Approved By





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

ATD Serial No: 296

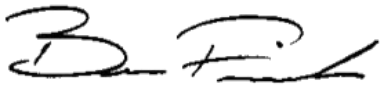
Test I.D: D231972

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.1	Pass
Humidity		%	10 to 70	48	Pass
Impact Velocity		m/s	5.51 to 5.63	5.62	Pass
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.35	Pass
	15 ms	m/s	3.30 to 4.10	3.58	Pass
	20 ms	m/s	4.40 to 5.40	5.12	Pass
	25 ms	m/s	5.40 to 6.10	5.80	Pass
	25-100 ms	m/s	5.50 to 6.20	5.84	Pass
Maximum D-Plane Rotation		deg	71 to 81	74	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	62	Pass
Maximum Occipital Condyle Moment		Nm	-44 to -36	-37	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	120	Pass
Overall Test Results				Pass	


 Laboratory Technician

07/28/2023

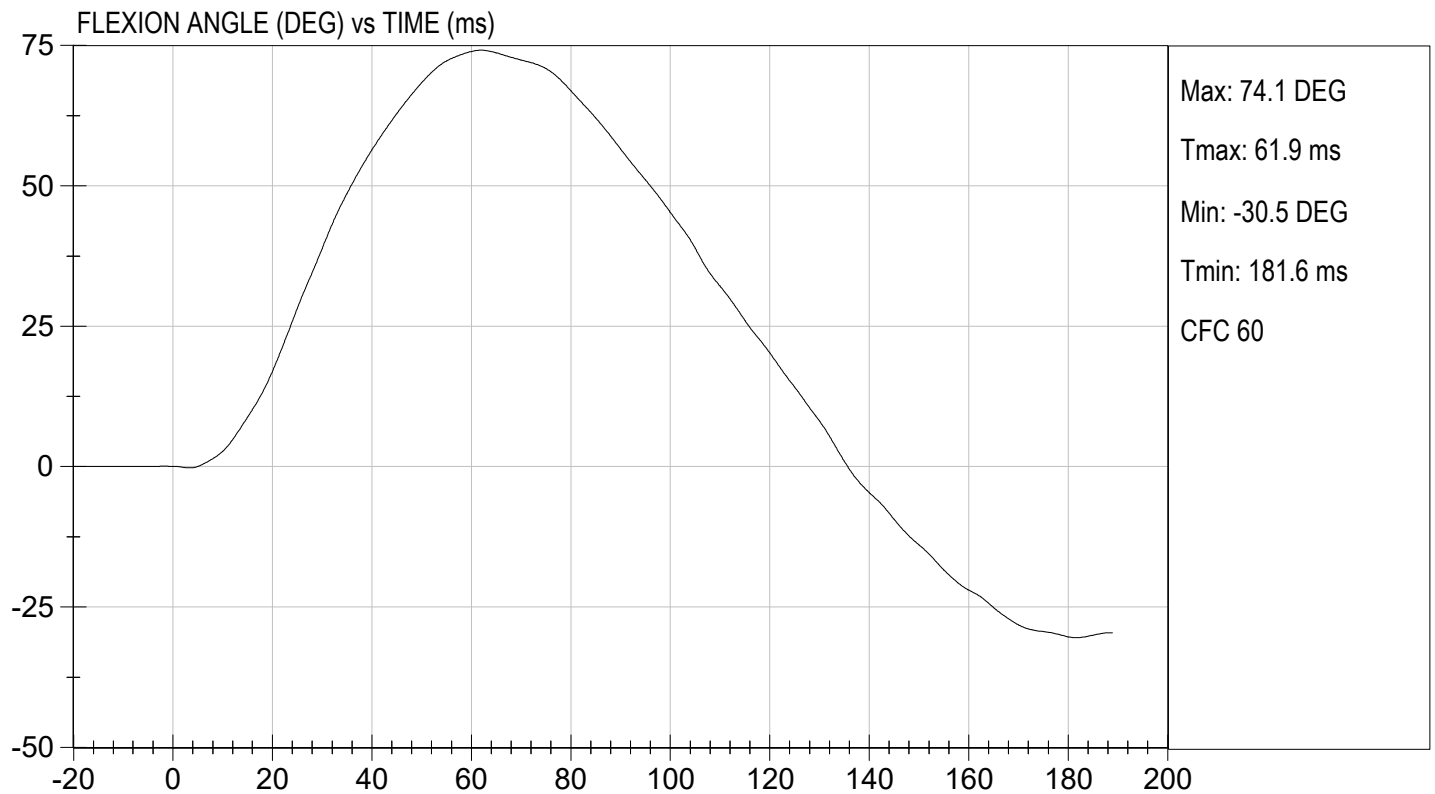
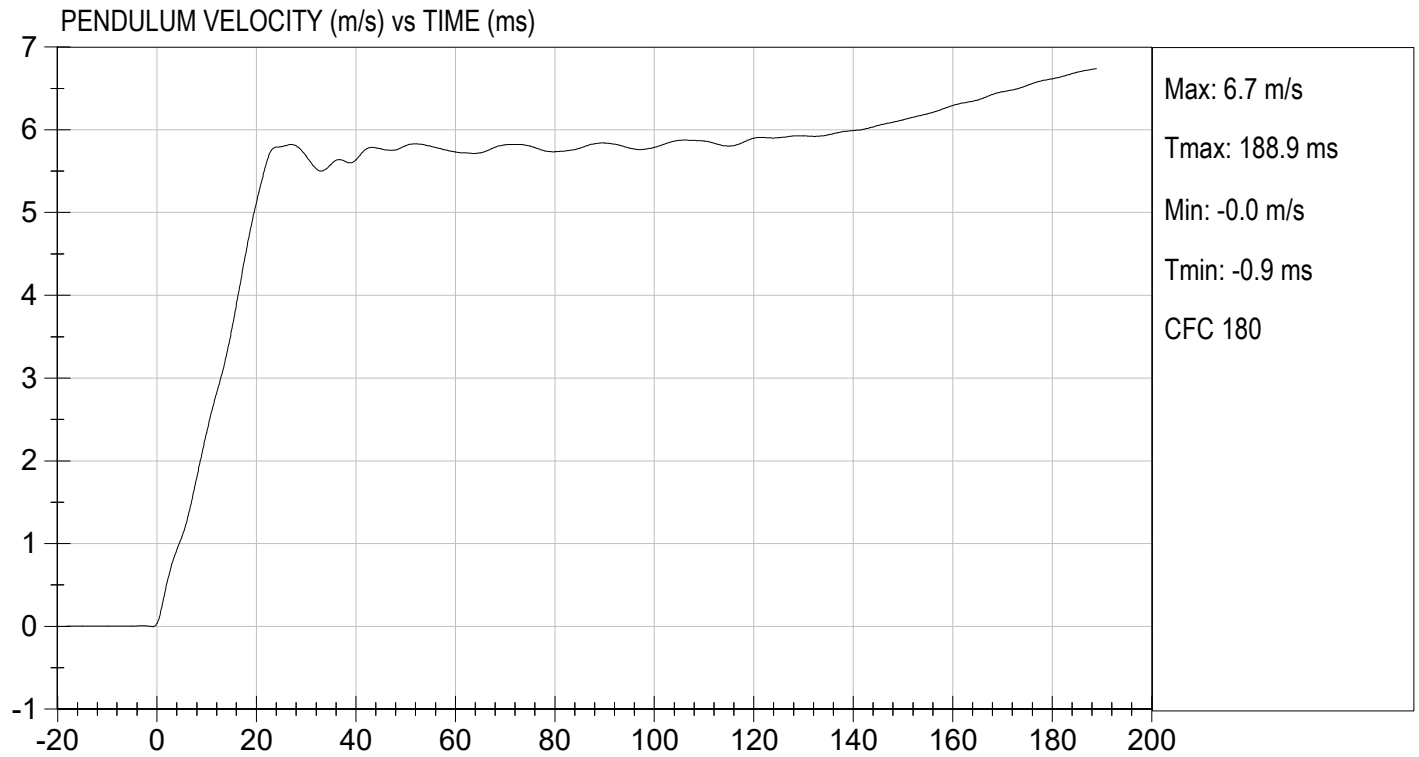
Test Date


 Approved By



TEST DESC: NECK BENDING
VELOCITY: 18.45 ft/s, 5.62 m/s

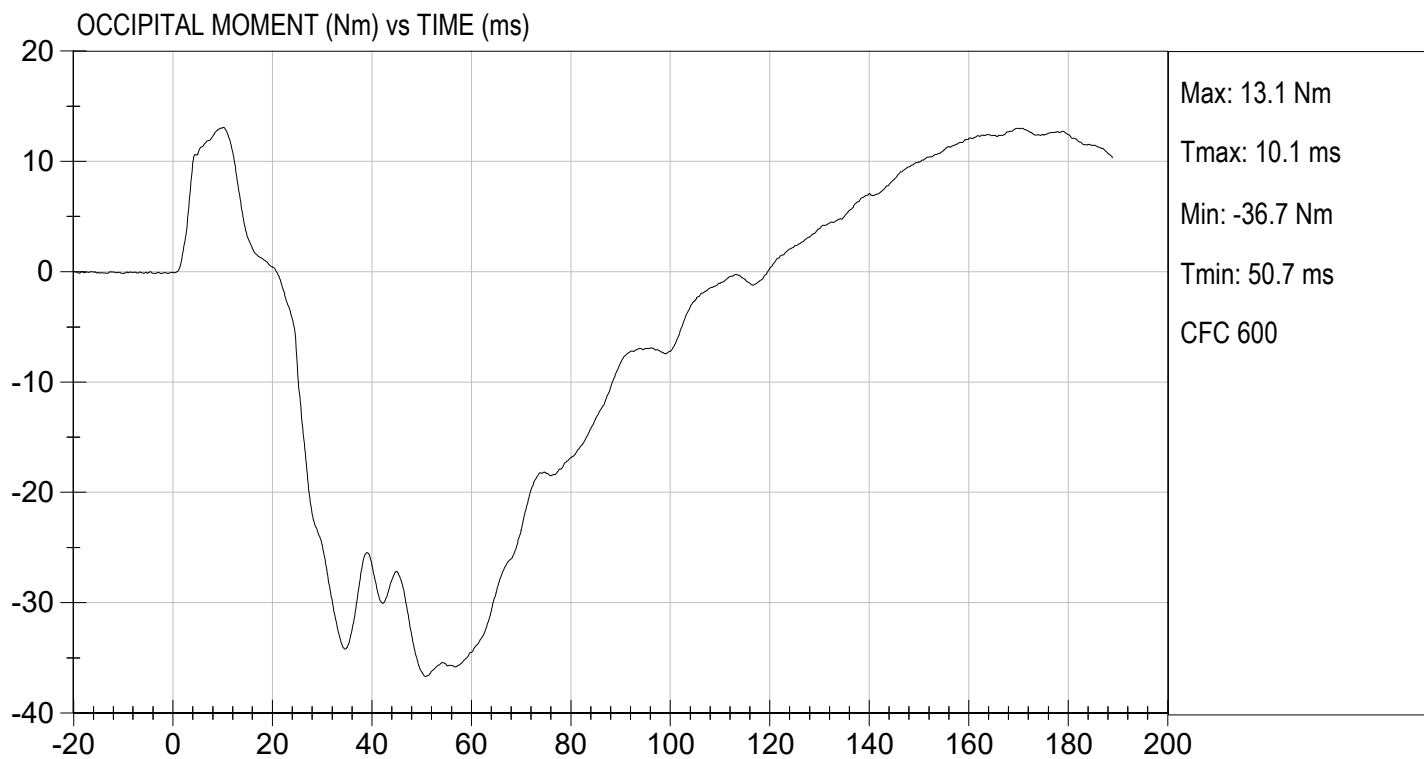
TEST DATE: 07/28/2023
TEST #: D231972





TEST DESC: NECK BENDING
VELOCITY: 18.45 ft/s, 5.62 m/s

TEST DATE: 07/28/2023
TEST #: D231972



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

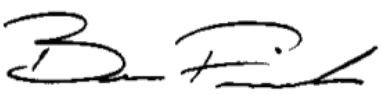
ATD Serial No: 296

Test ID: D231973

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	13 to 18	16	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	20	Pass
			Overall Test Results	Pass


Laboratory Technician

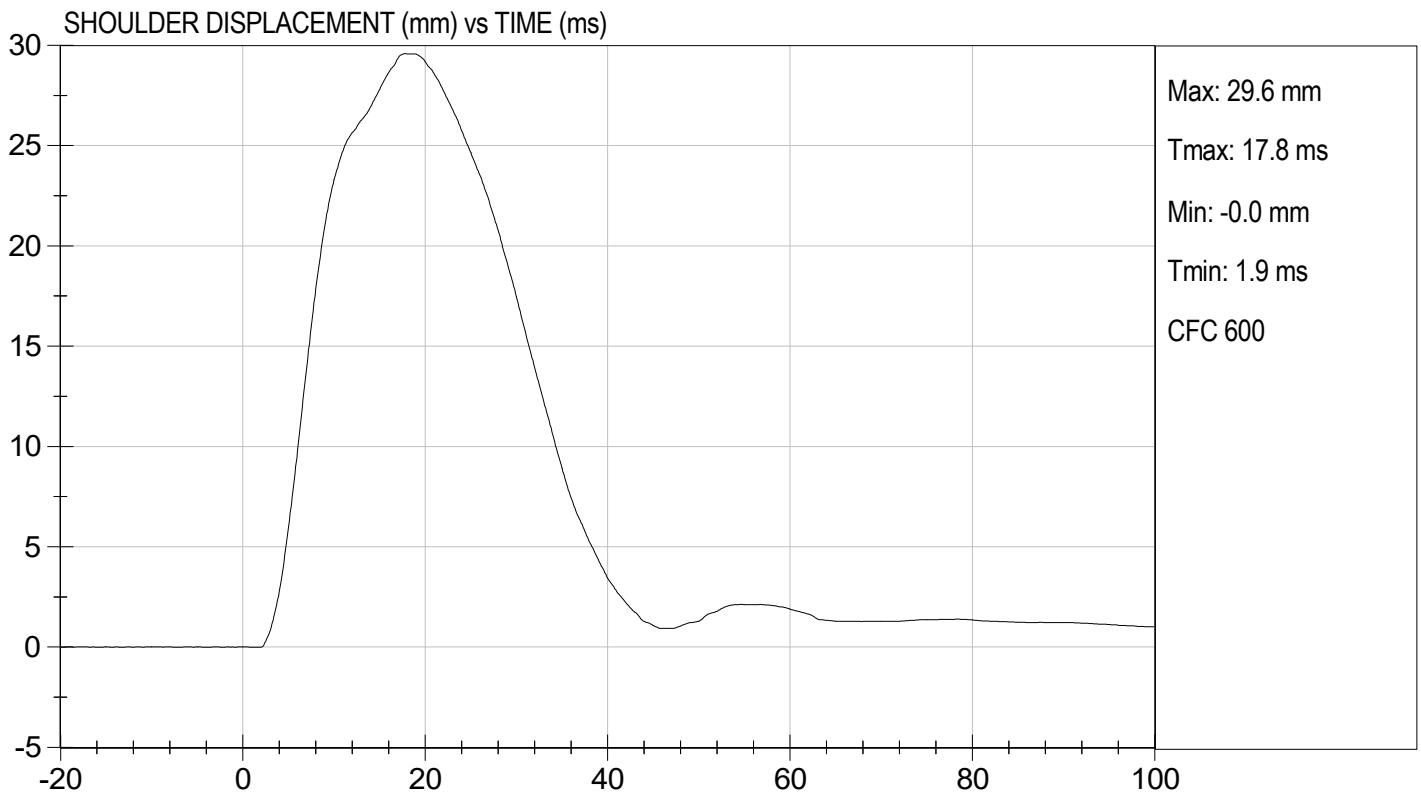
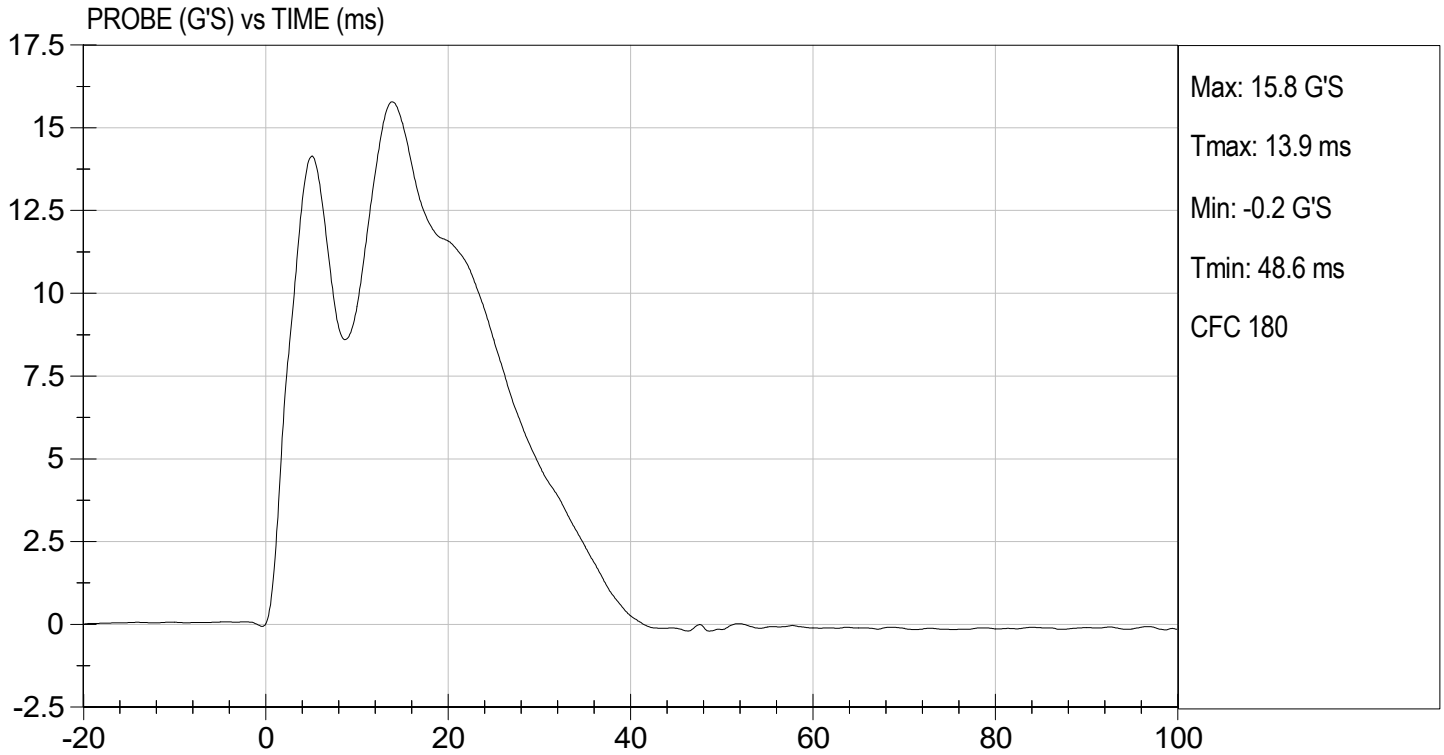
07/28/2023
Test Date


Approved By



TEST DESC: SHOULDER IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

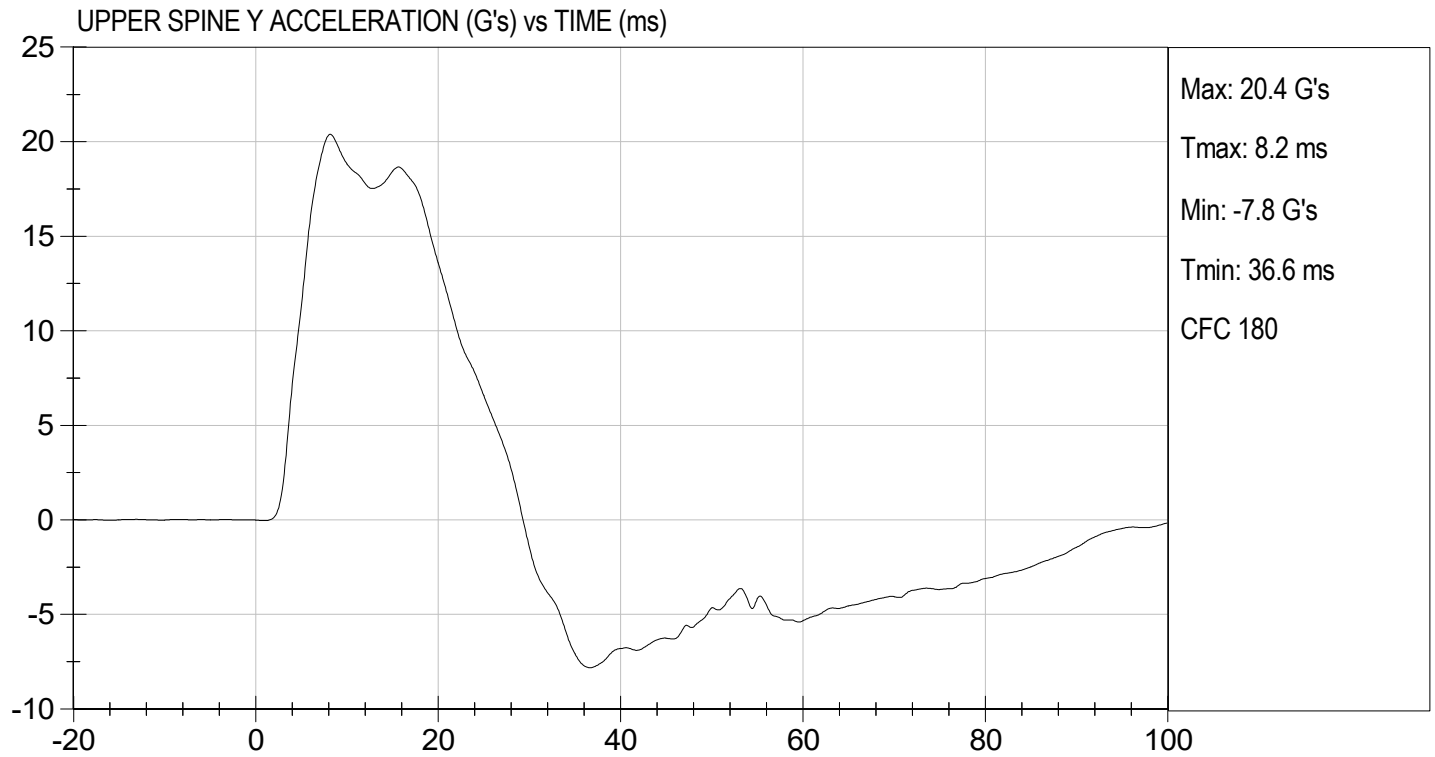
TEST DATE: 07/28/2023
TEST #: D231973





TEST DESC: SHOULDER IMPACT
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/28/2023
TEST #: D231973



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

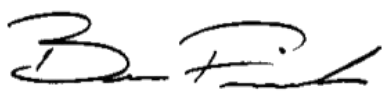
ATD Serial No: 296

Test I.D: D231974

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	20.9	Pass
Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	34	Pass
Shoulder Displacement	mm	31 to 40	32	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	35	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	39	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
Overall Test Results				Pass


Laboratory Technician

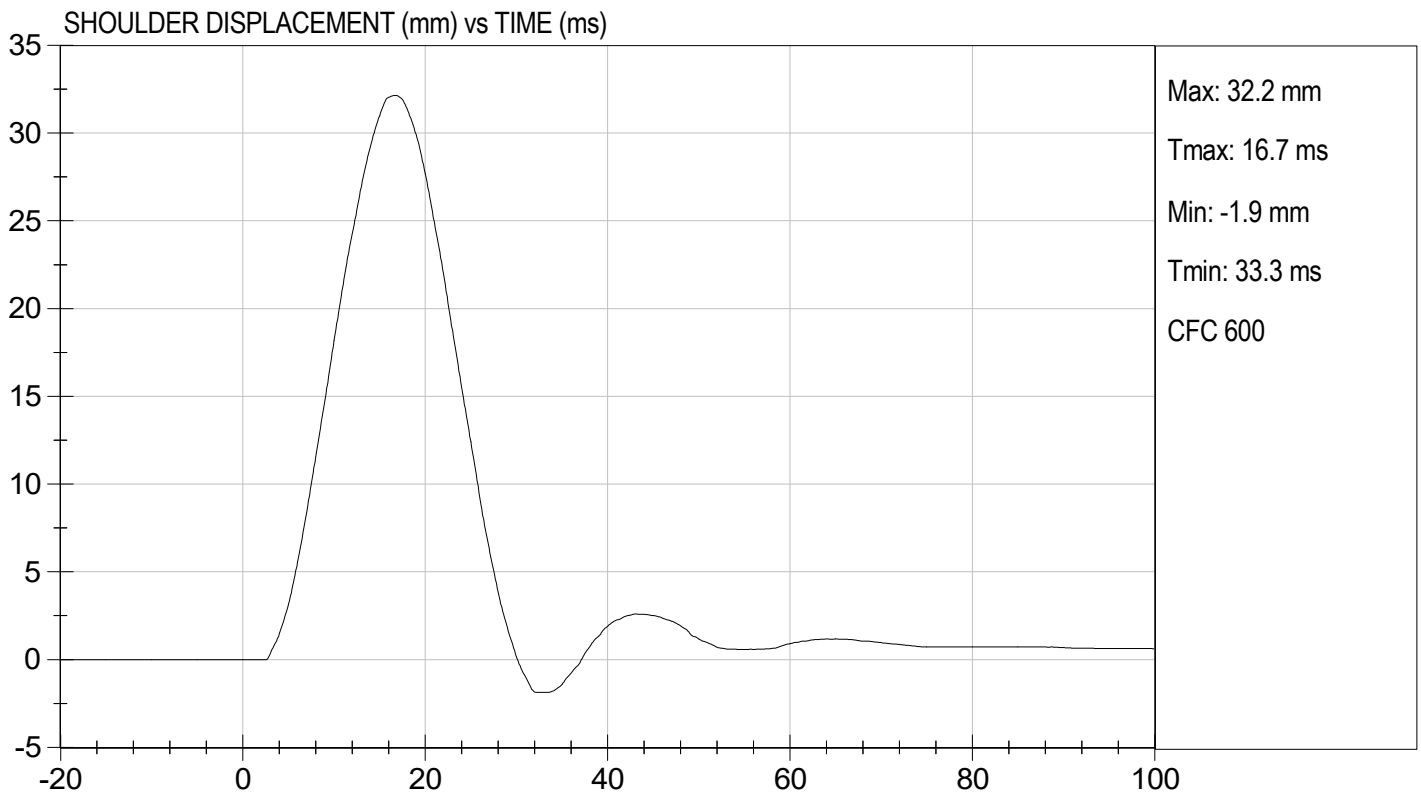
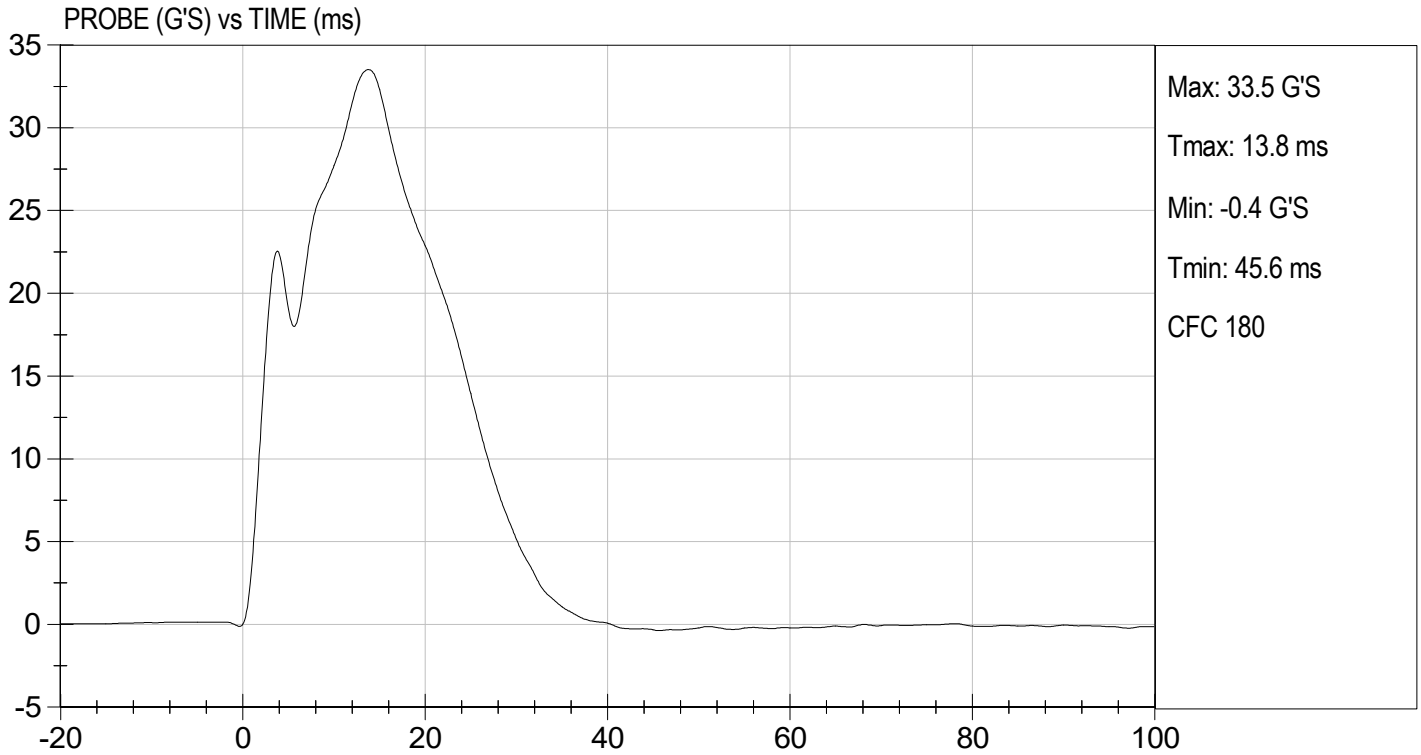
07/28/2023
Test Date


Approved By



TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

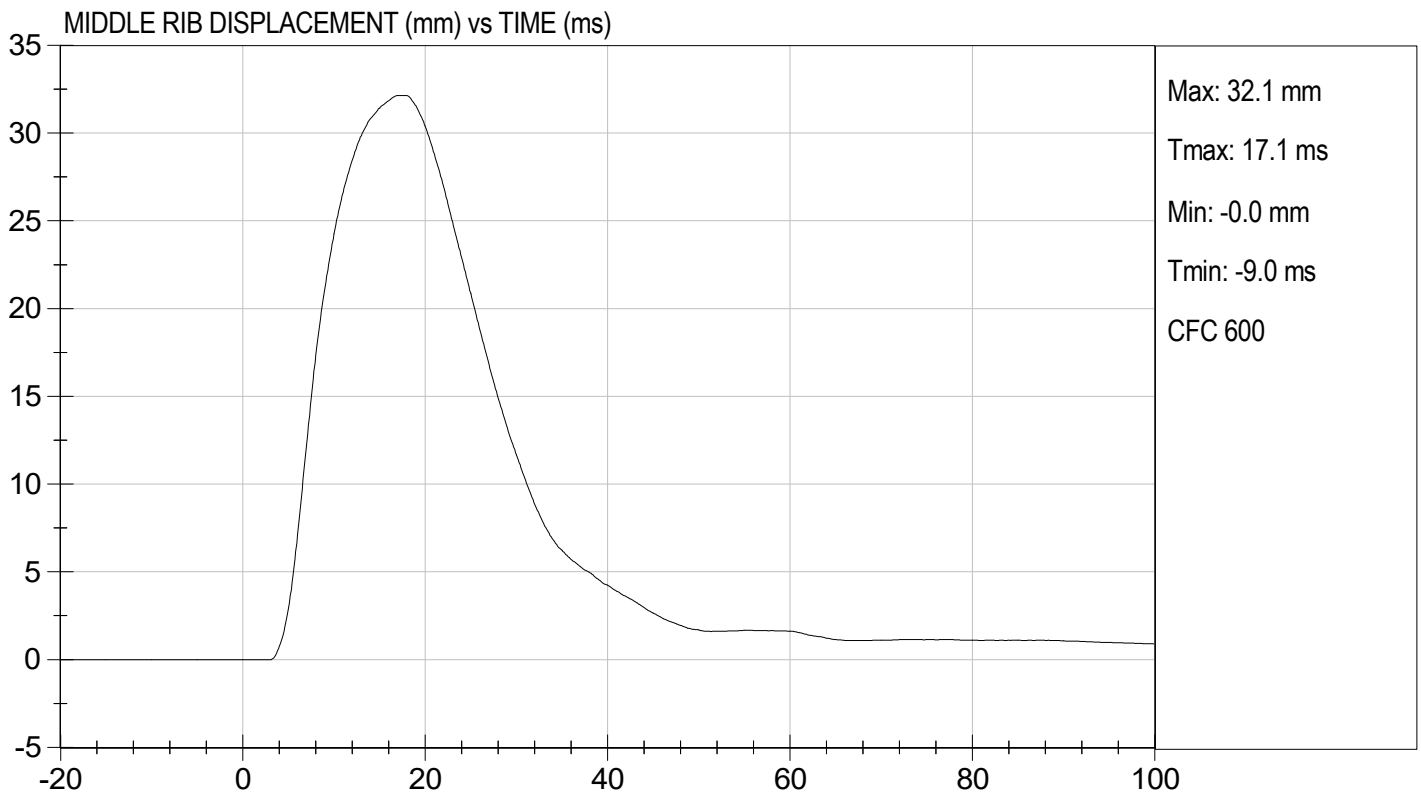
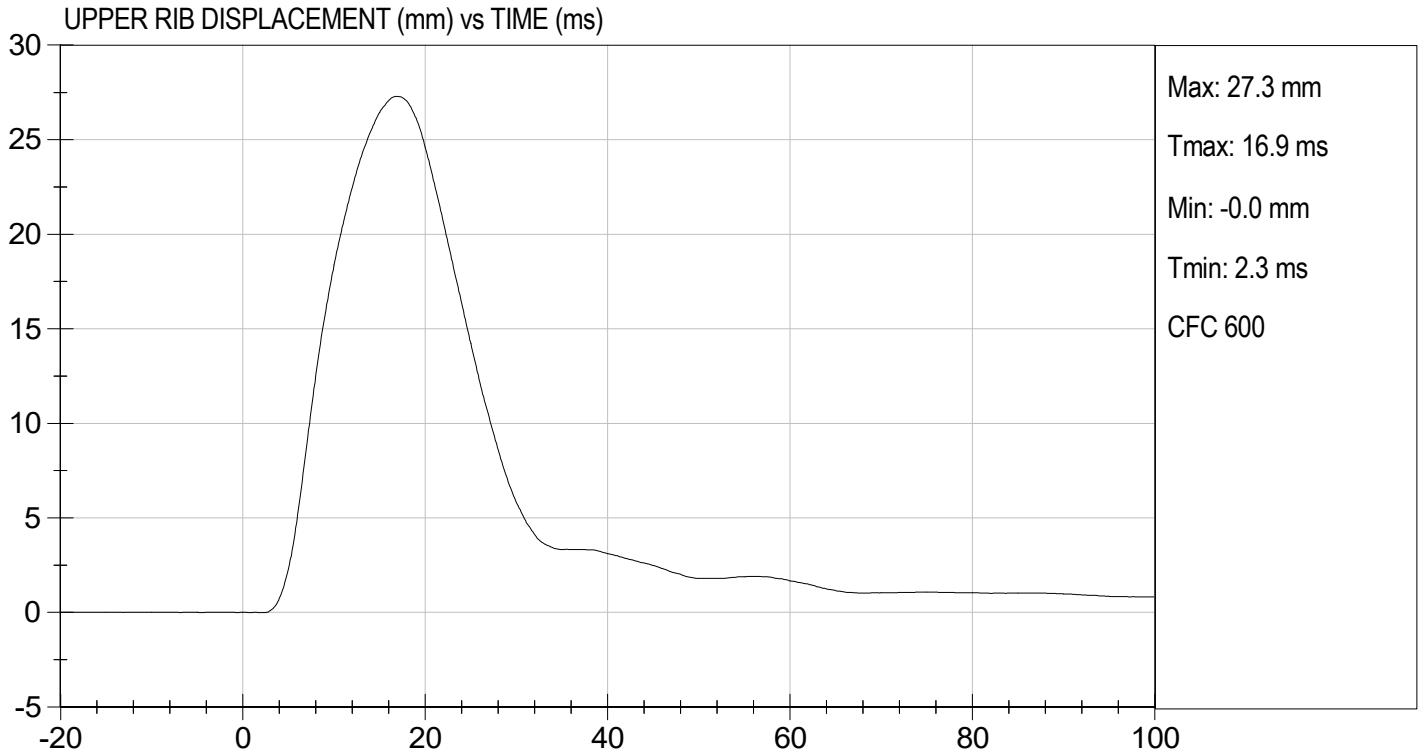
TEST DATE: 07/28/2023
TEST #: D231974





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

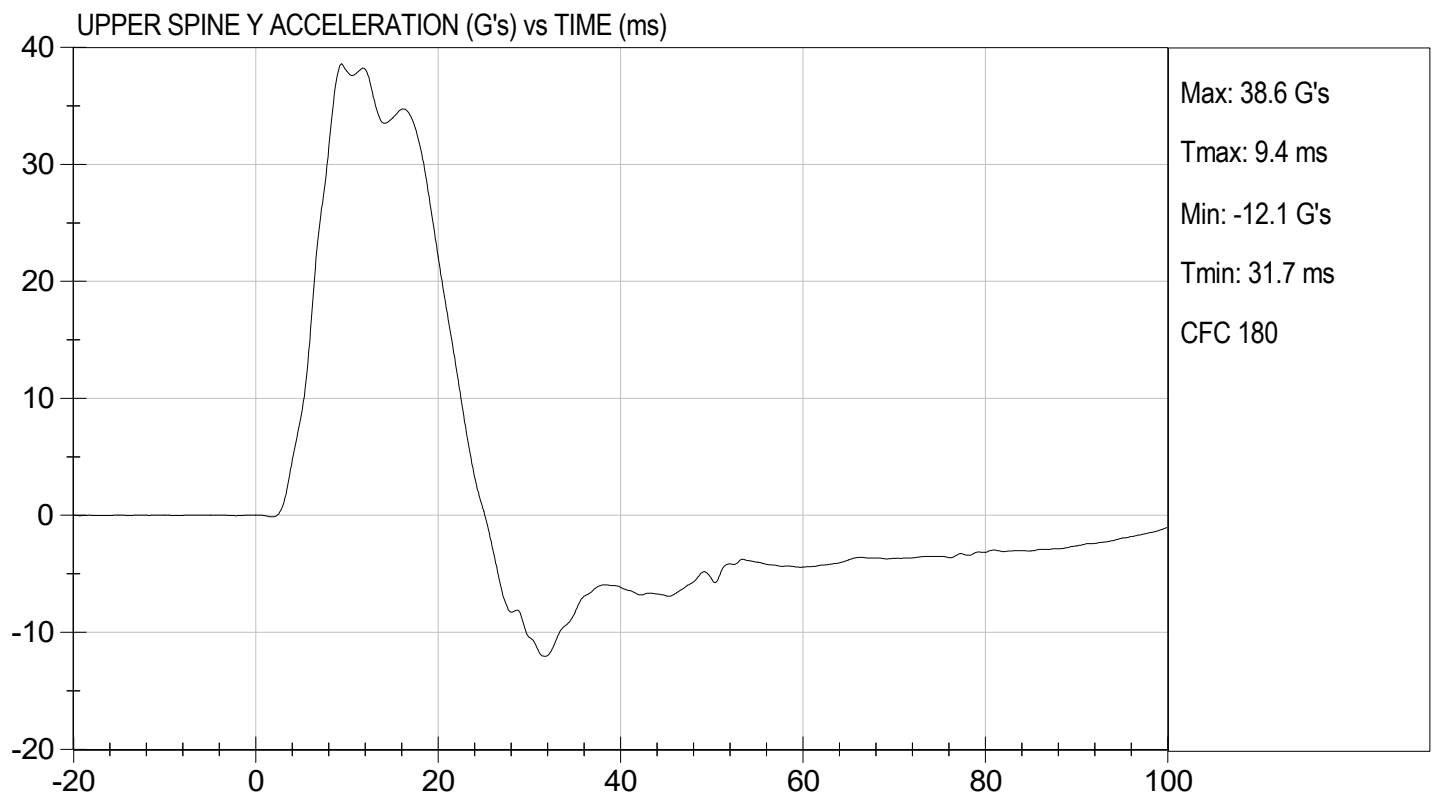
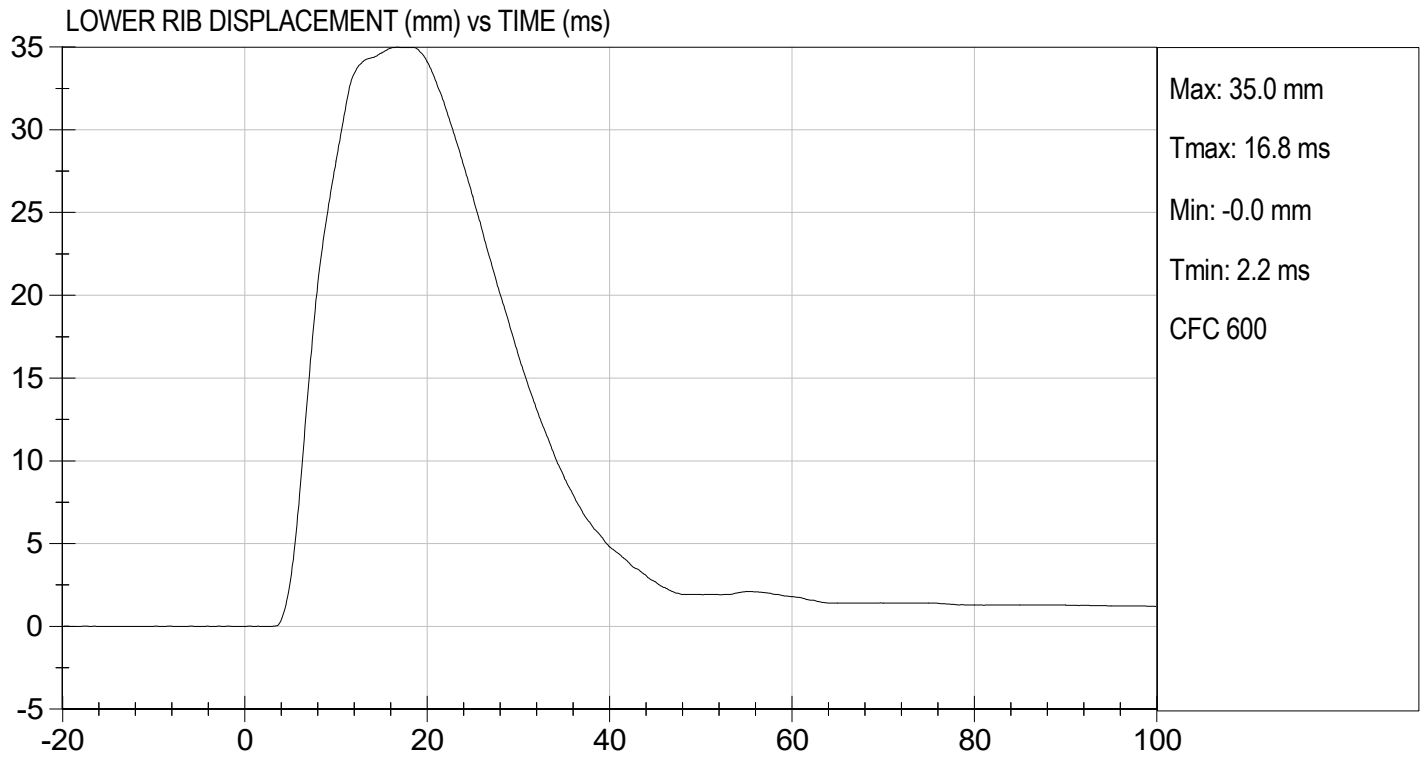
TEST DATE: 07/28/2023
TEST #: D231974





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

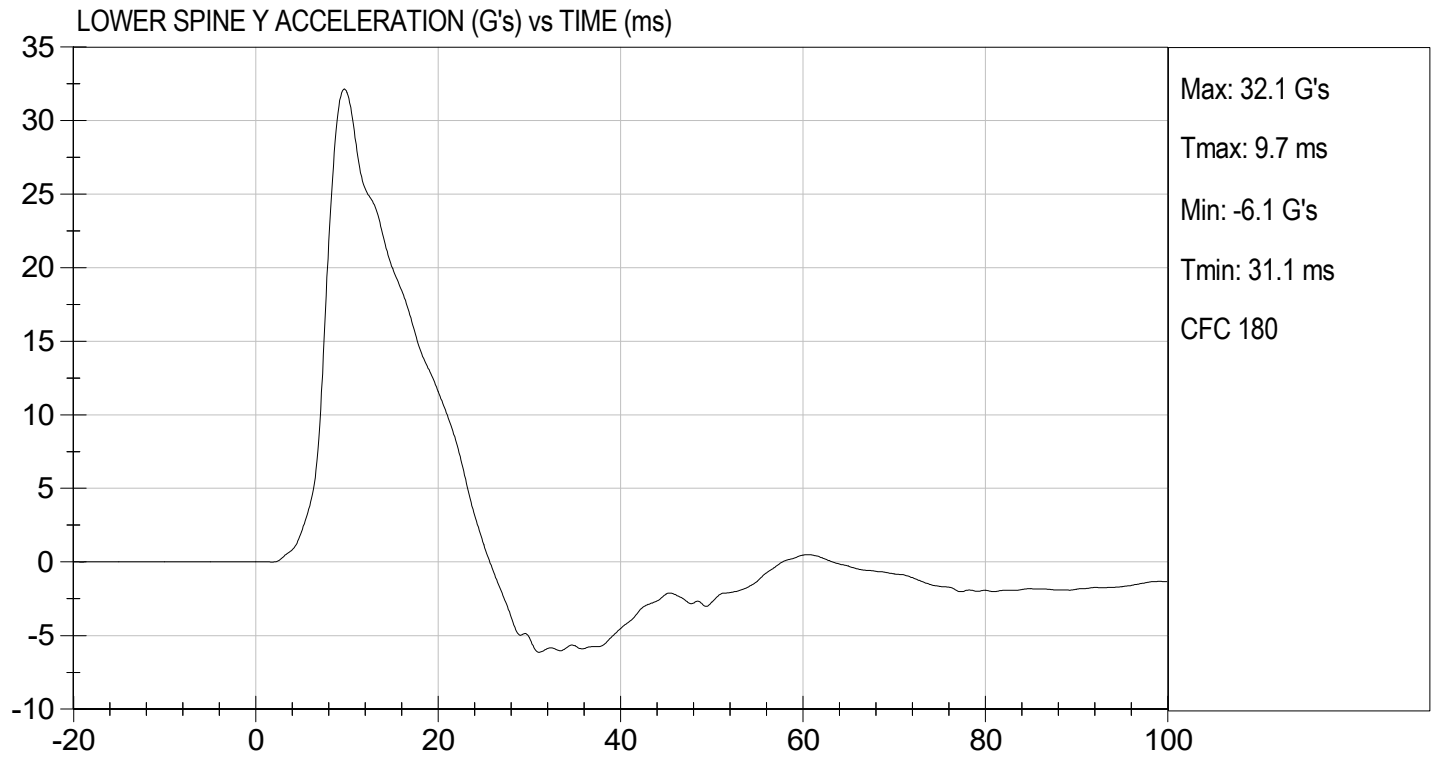
TEST DATE: 07/28/2023
TEST #: D231974





TEST DESC: THORAX IMPACT WITH ARM
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/28/2023
TEST #: D231974



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

ATD Serial No: 296

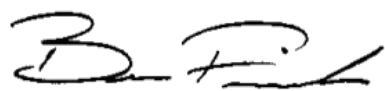
Test I.D: D231975

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	20.9	Pass
Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	14 to 18	16	Pass
Upper Rib Displacement	mm	32 to 40	36	Pass
Middle Rib Displacement	mm	39 to 45	43	Pass
Lower Rib Displacement	mm	35 to 43	41	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	16	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
Overall Test Results				Pass


 Laboratory Technician

07/28/2023

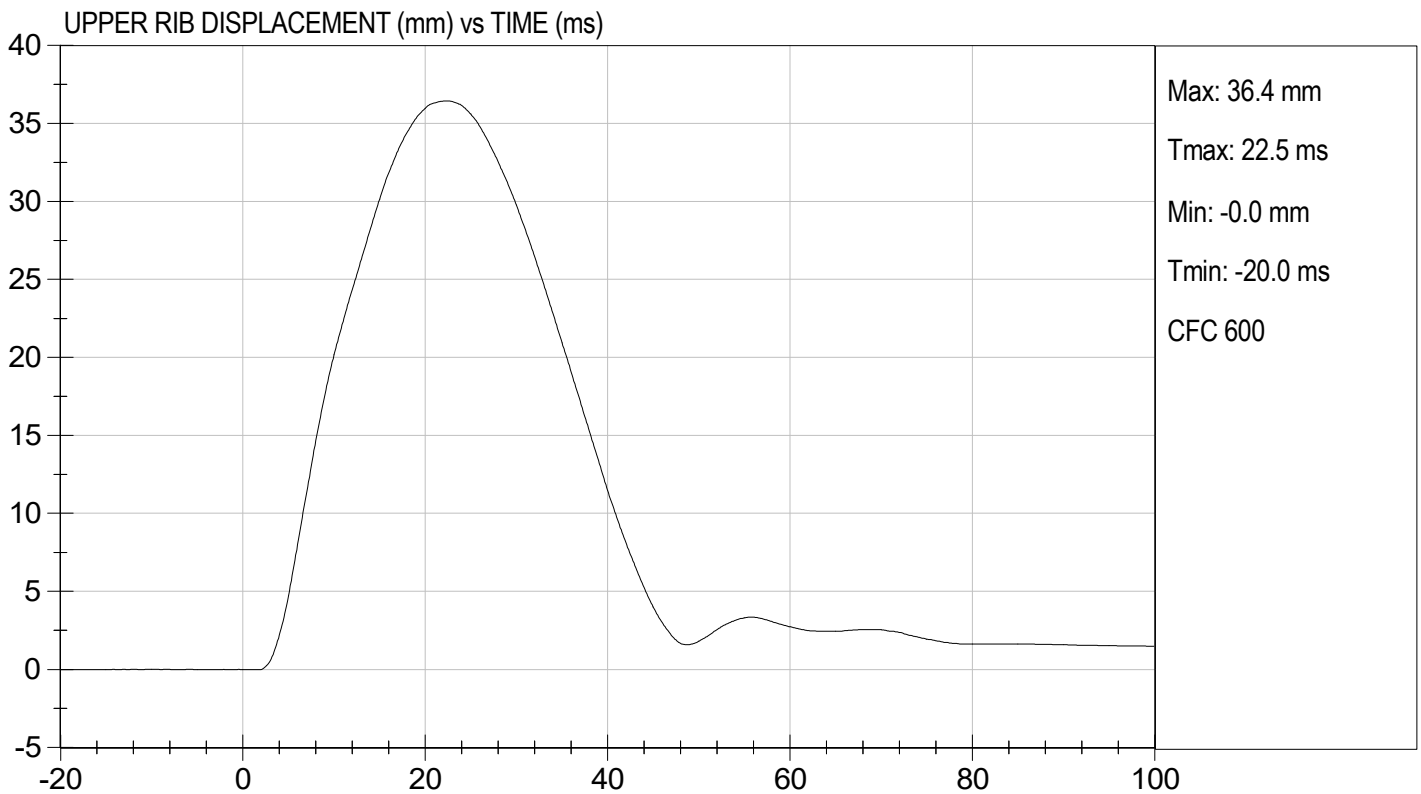
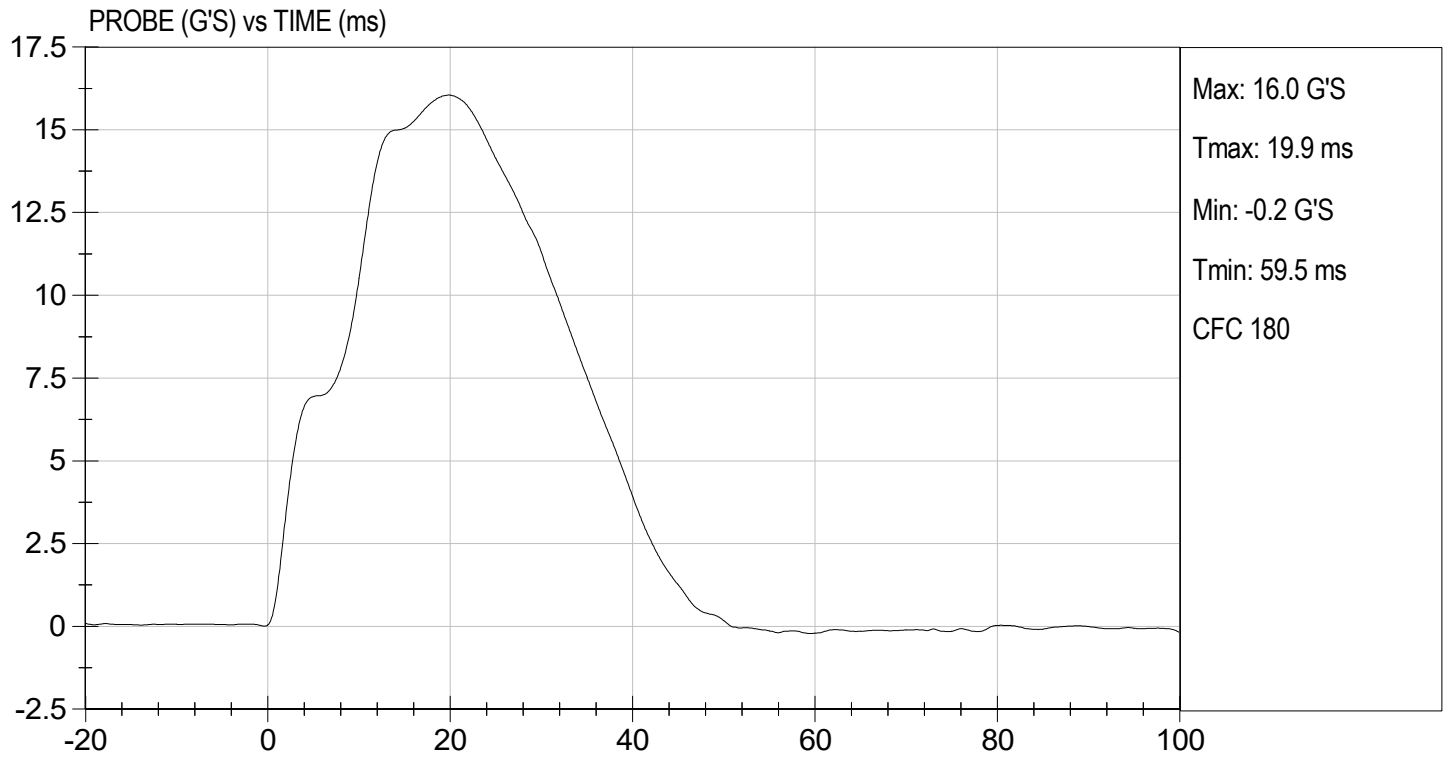
Test Date


 Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

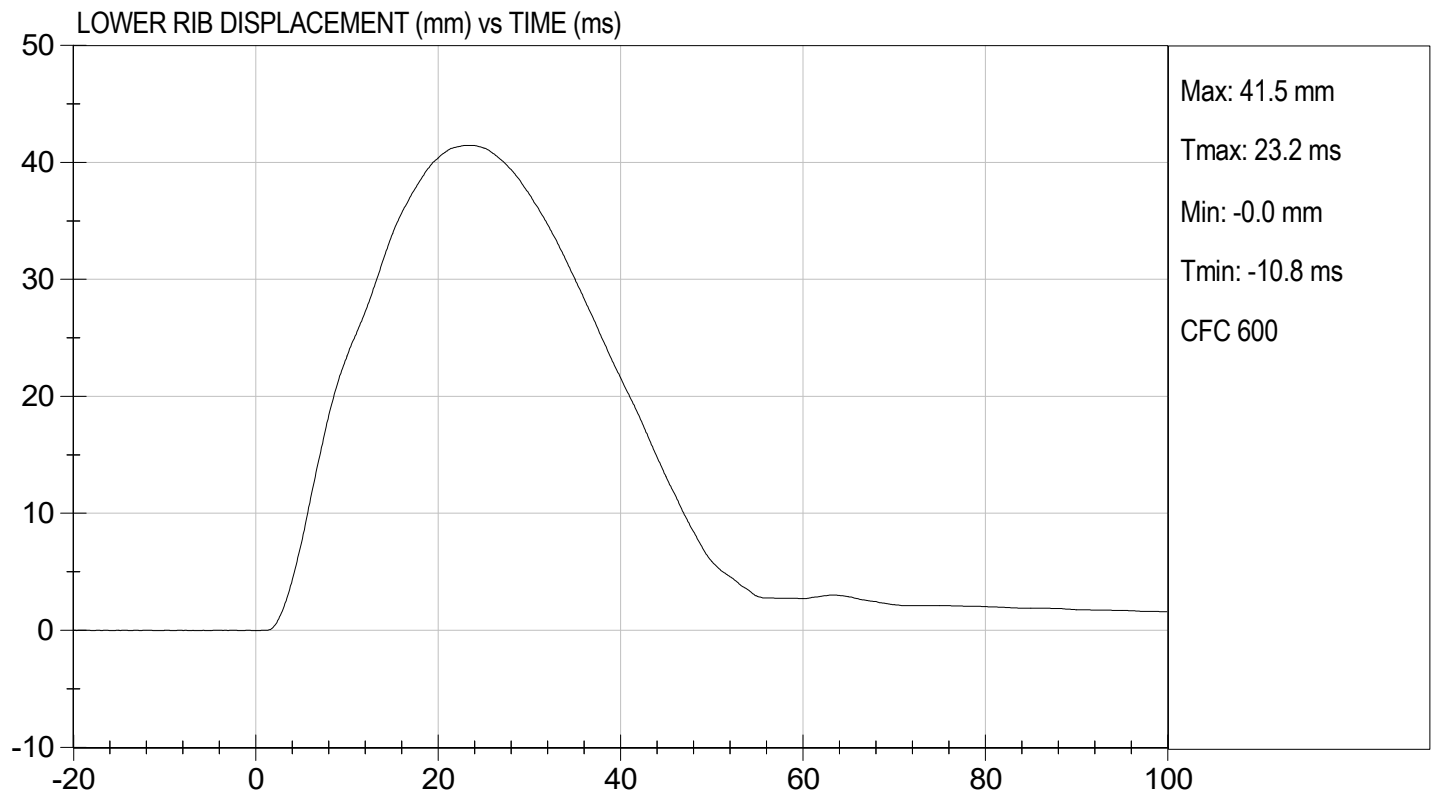
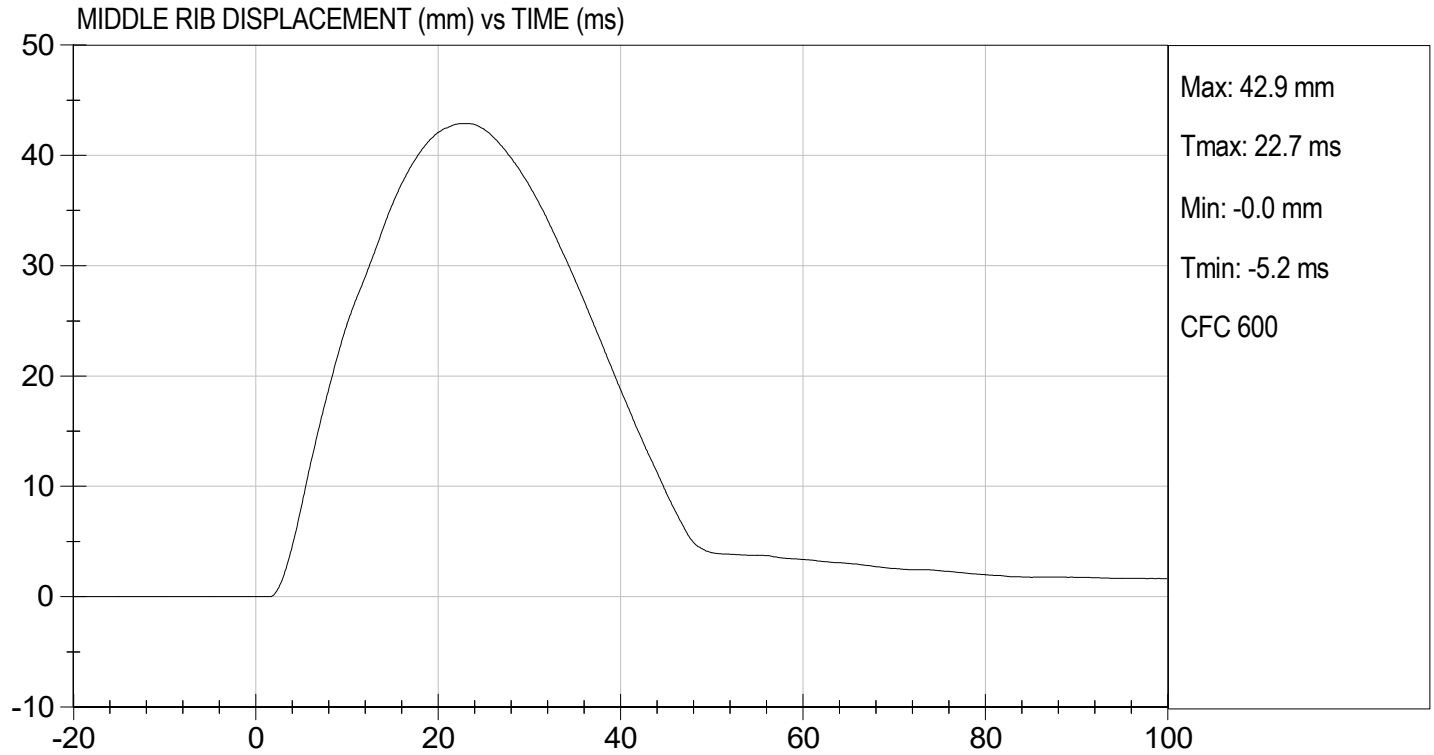
TEST DATE: 07/28/2023
TEST #: D231975





TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

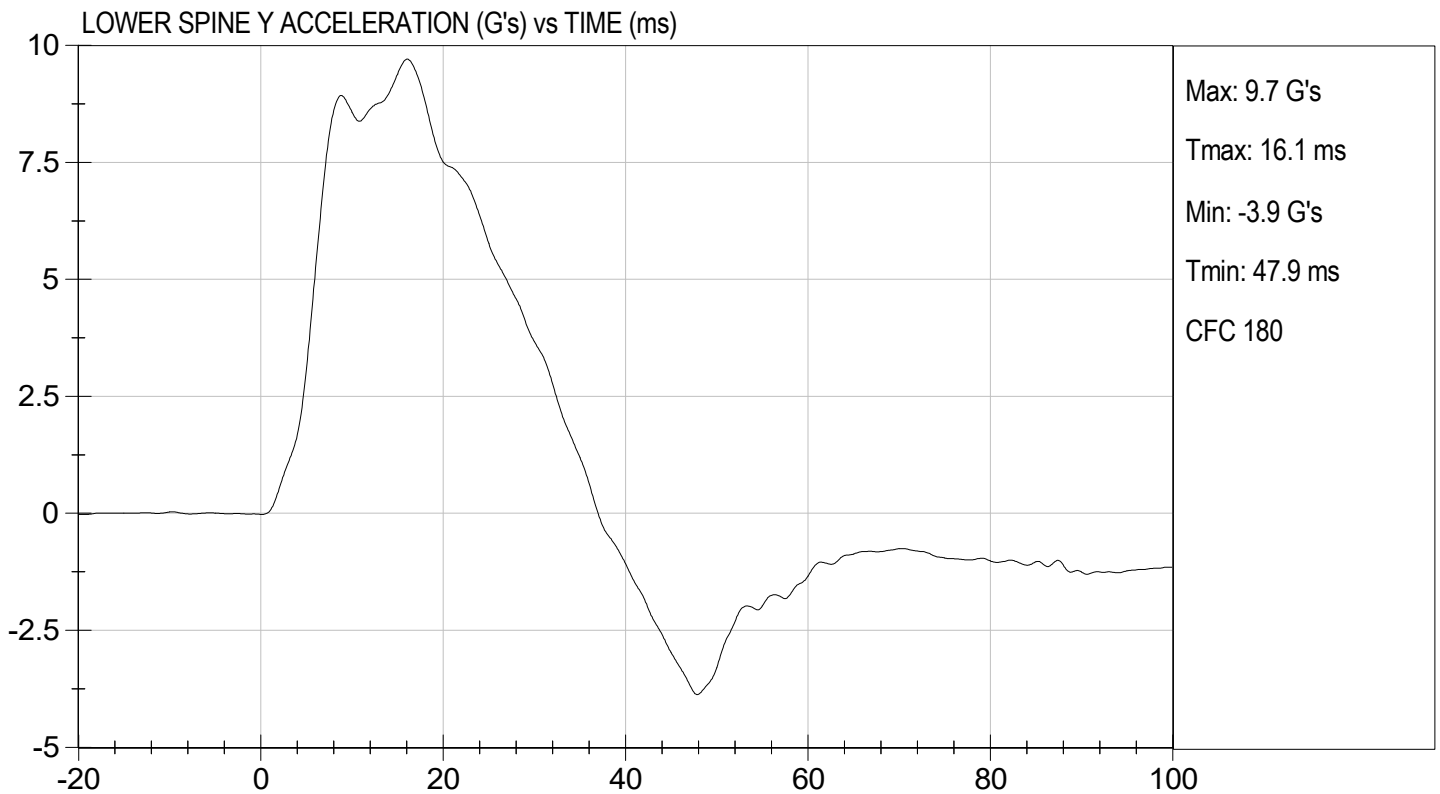
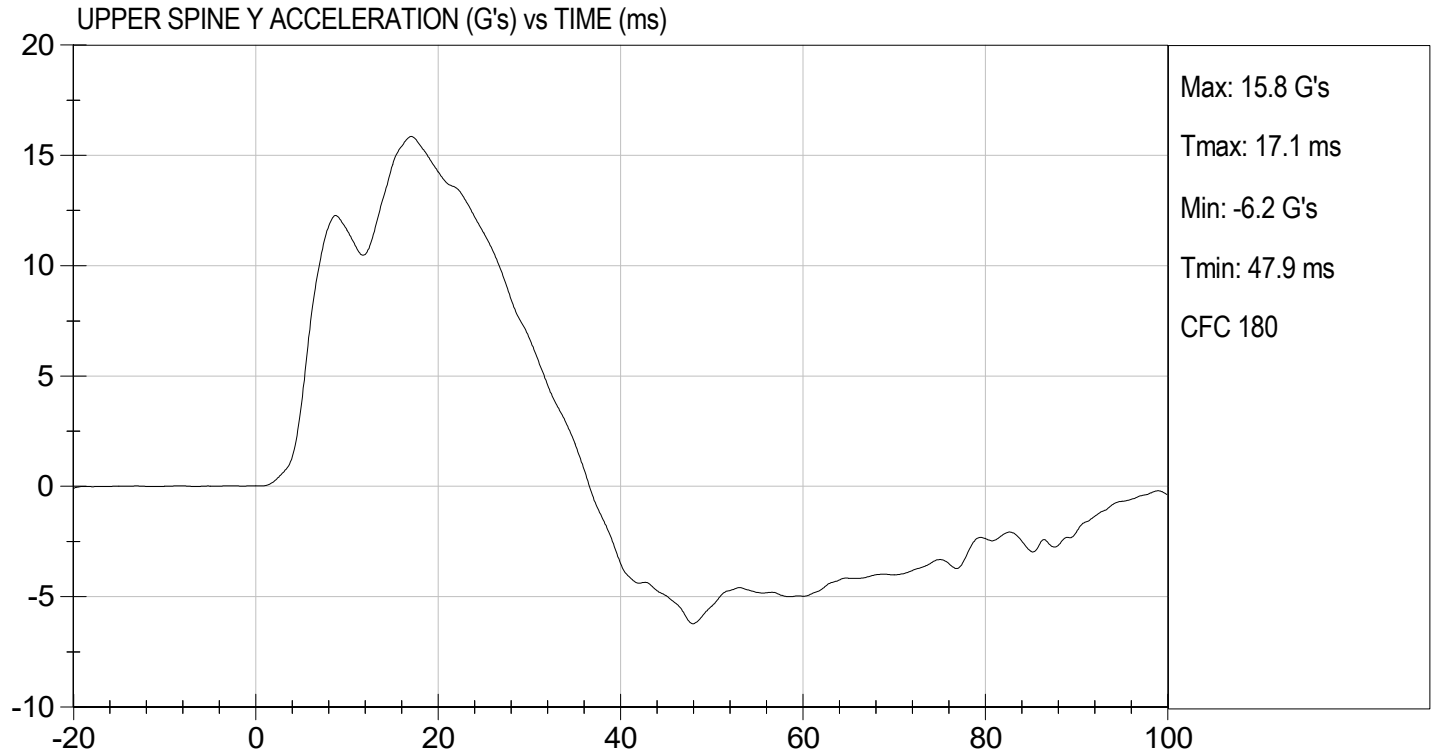
TEST DATE: 07/28/2023
TEST #: D231975





TEST DESC: THORAX IMPACT WITHOUT ARM
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 07/28/2023
TEST #: D231975



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

ATD Serial No: 296

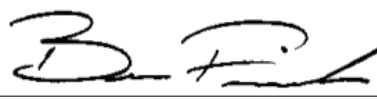
Test I.D: D231976

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	20.9	Pass
Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.20 to 4.40	4.39	Pass
Maximum Probe Acceleration	G's	12 to 16	14	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	42	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	9	Pass
Overall Test Results				Pass


Laboratory Technician

07/28/2023

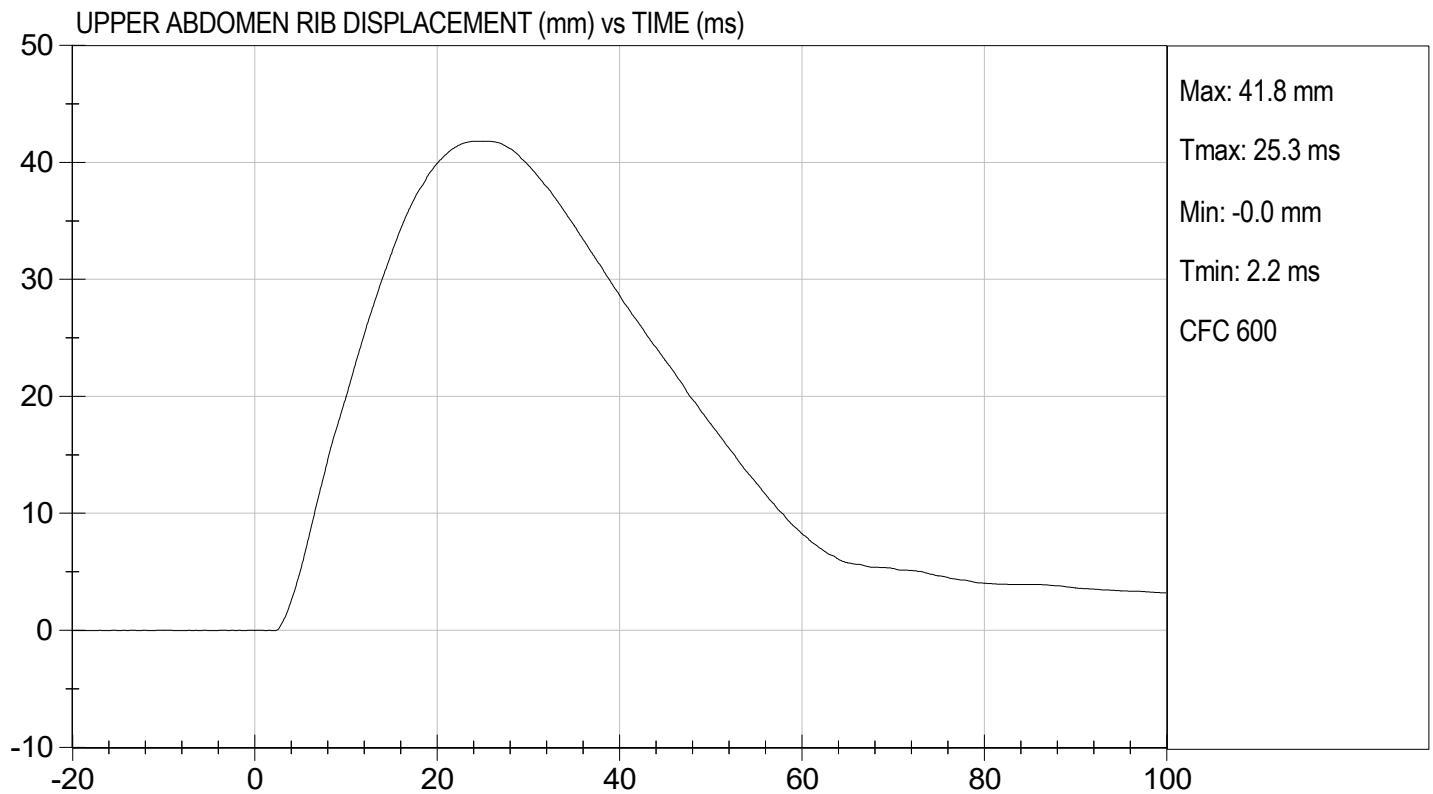
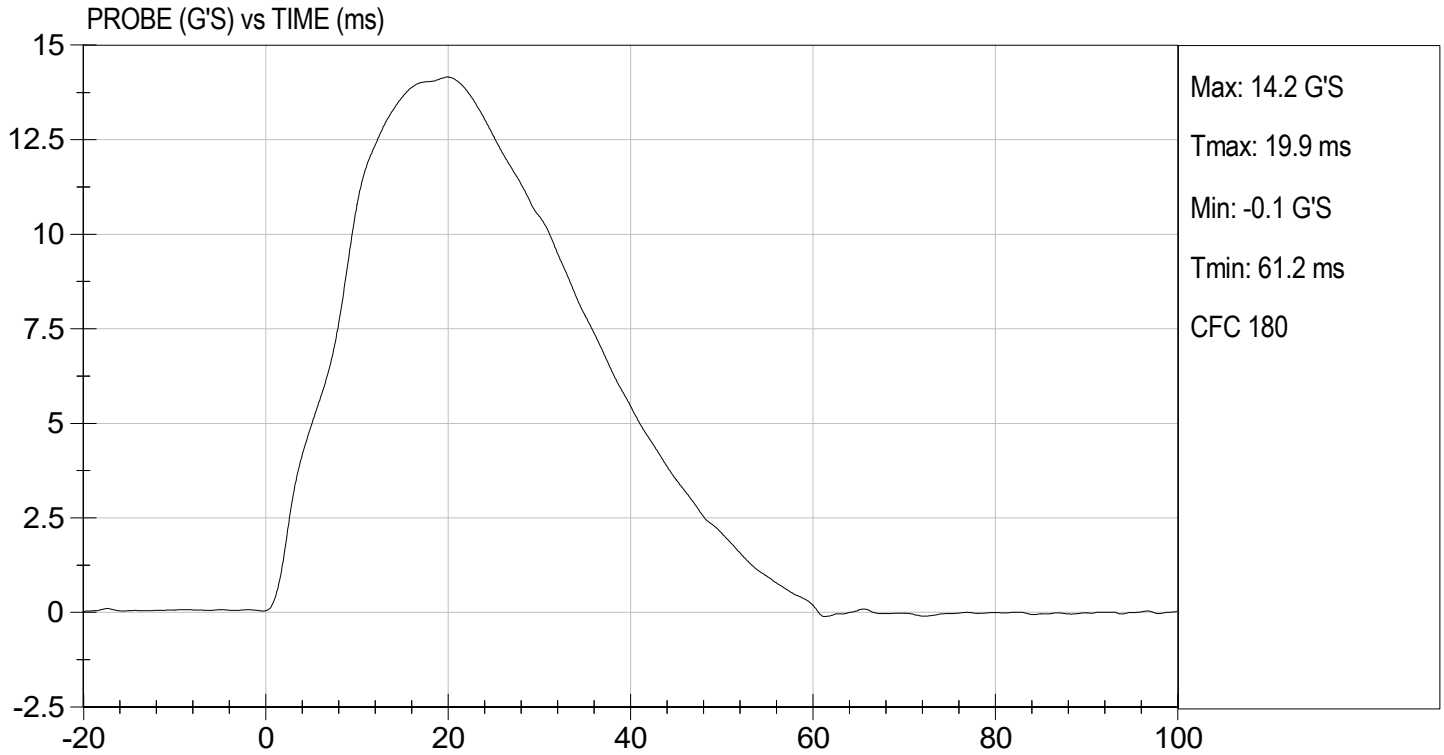
Test Date


Approved By



TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.40 ft/s, 4.39 m/s

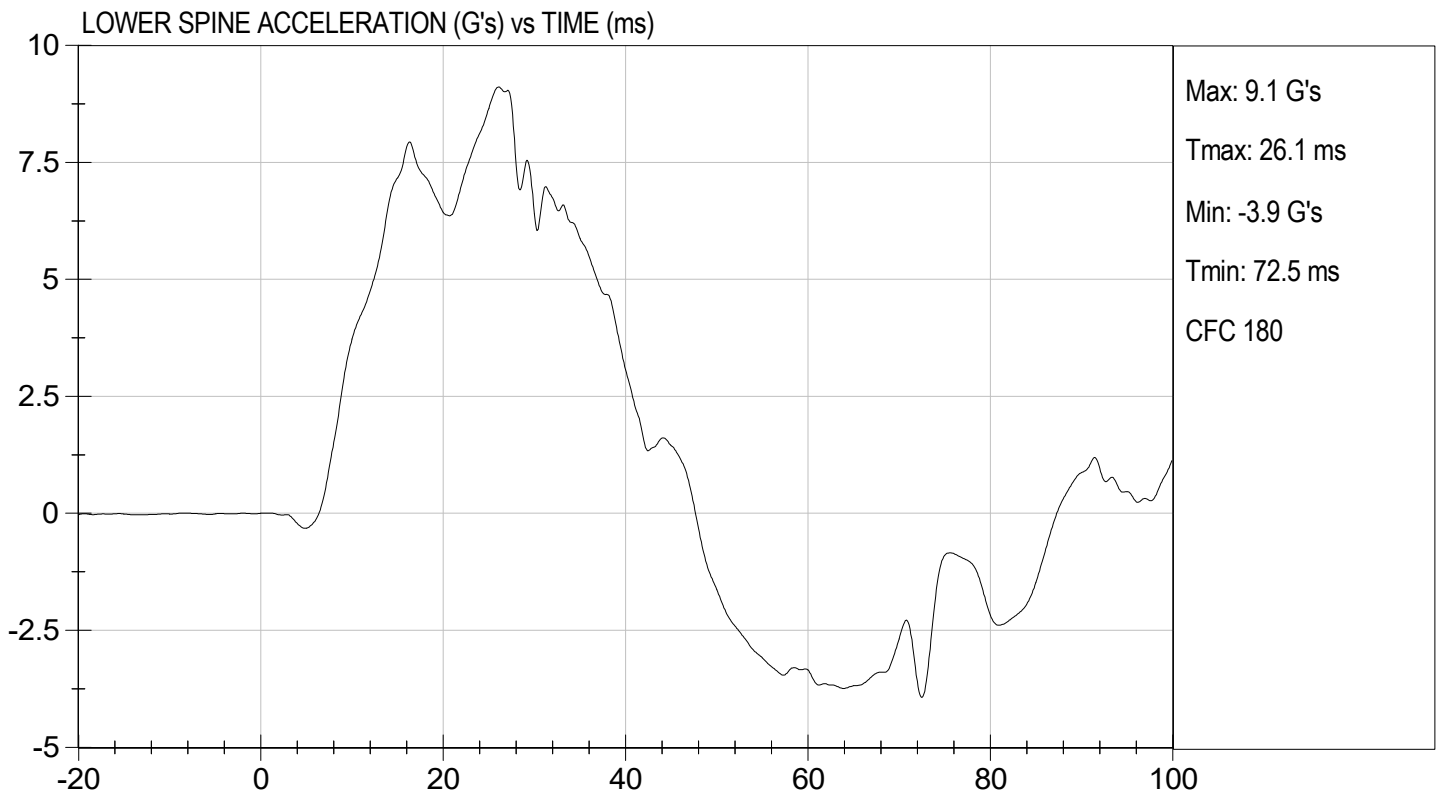
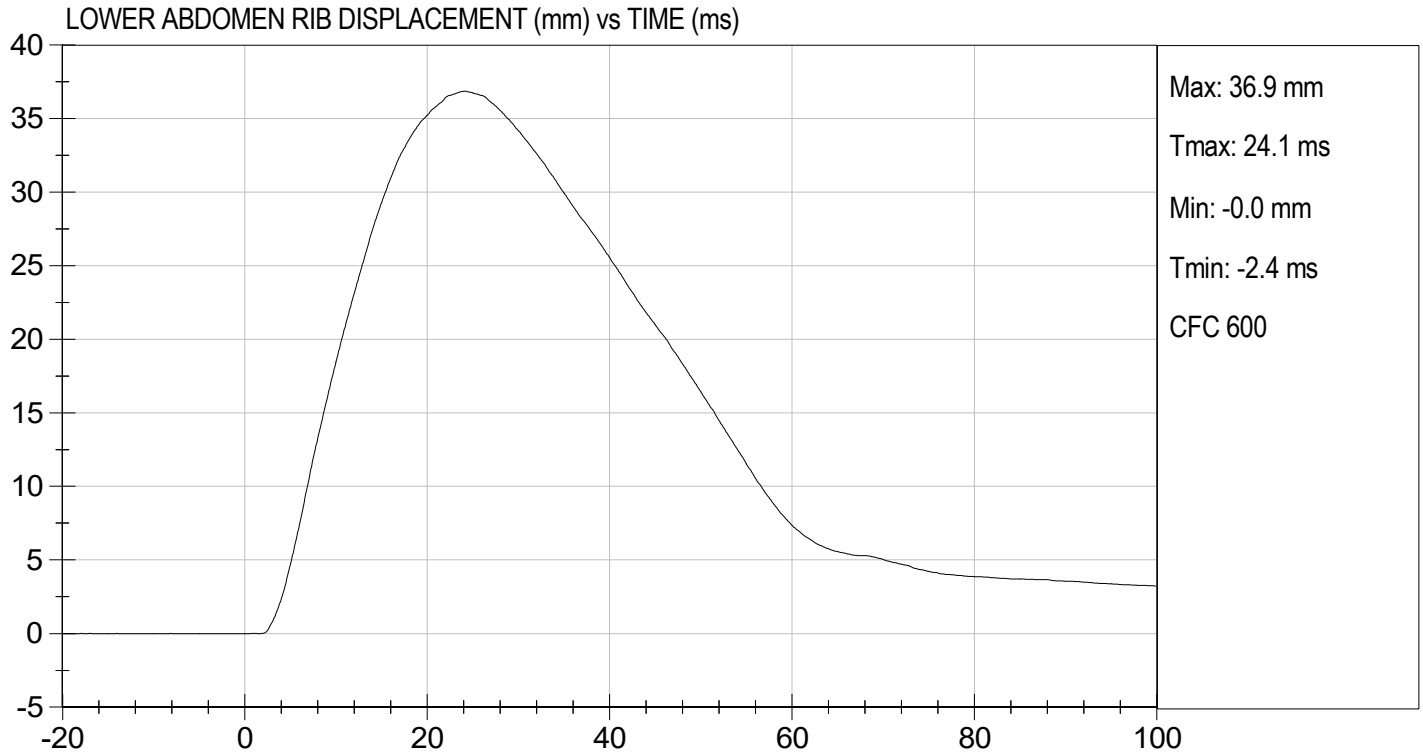
TEST DATE: 07/28/2023
TEST #: D231976





TEST DESC: ABDOMEN IMPACT
VELOCITY: 14.40 ft/s, 4.39 m/s

TEST DATE: 07/28/2023
TEST #: D231976



MGA RESEARCH CORPORATION

PELVIS IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

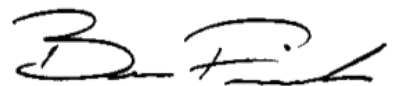
Test I.D: D231977

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	38 to 47	42	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	40.4	Pass
Peak Acetabulum Force	N	3600 to 4300	4,015	Pass
Overall Test Results				Pass


Laboratory Technician

07/28/2023

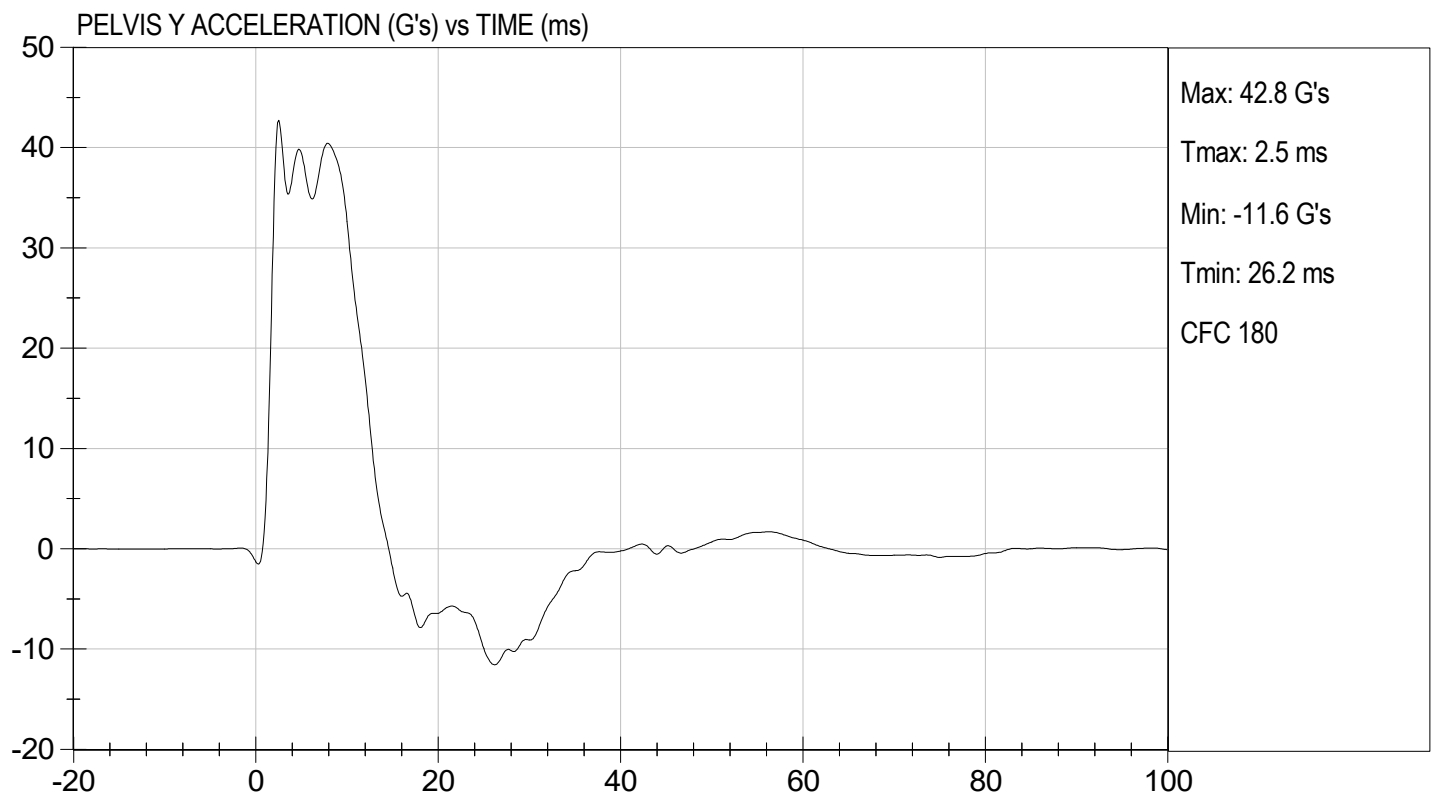
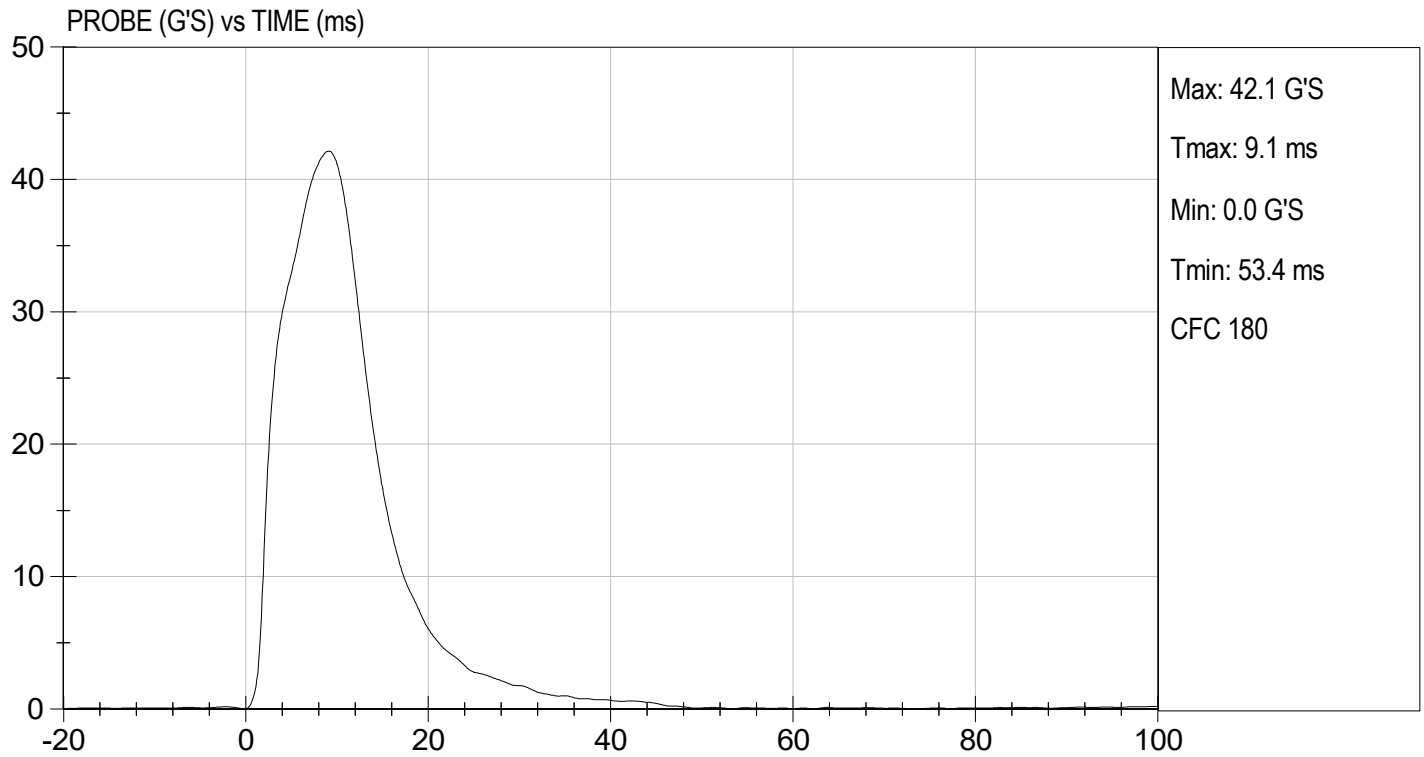
Test Date


Approved By



TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

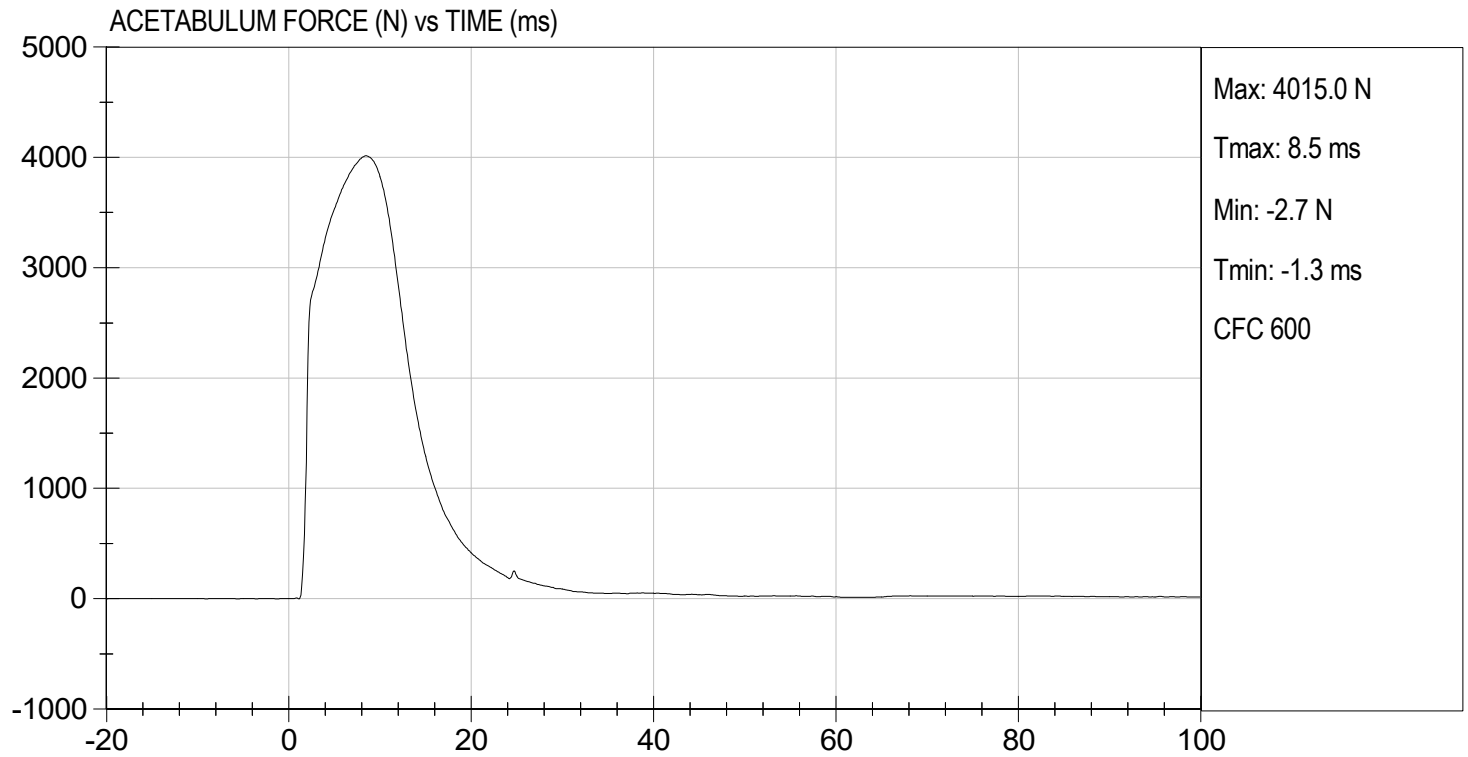
TEST DATE: 07/28/2023
TEST #: D231977





TEST DESC: PELVIS IMPACT
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 07/28/2023
TEST #: D231977



MGA RESEARCH CORPORATION

ILIAC IMPACT TEST

SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

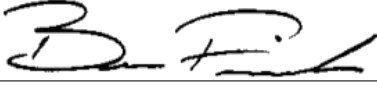
Test I.D: D231978

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22	Pass
Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.20 to 4.40	4.38	Pass
Maximum Probe Acceleration	G's	36 to 45	42	Pass
Pelvis Y Acceleration	G's	28 to 39	33	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	5,064	Pass
			Overall Test Results	Pass


Laboratory Technician

07/28/2023

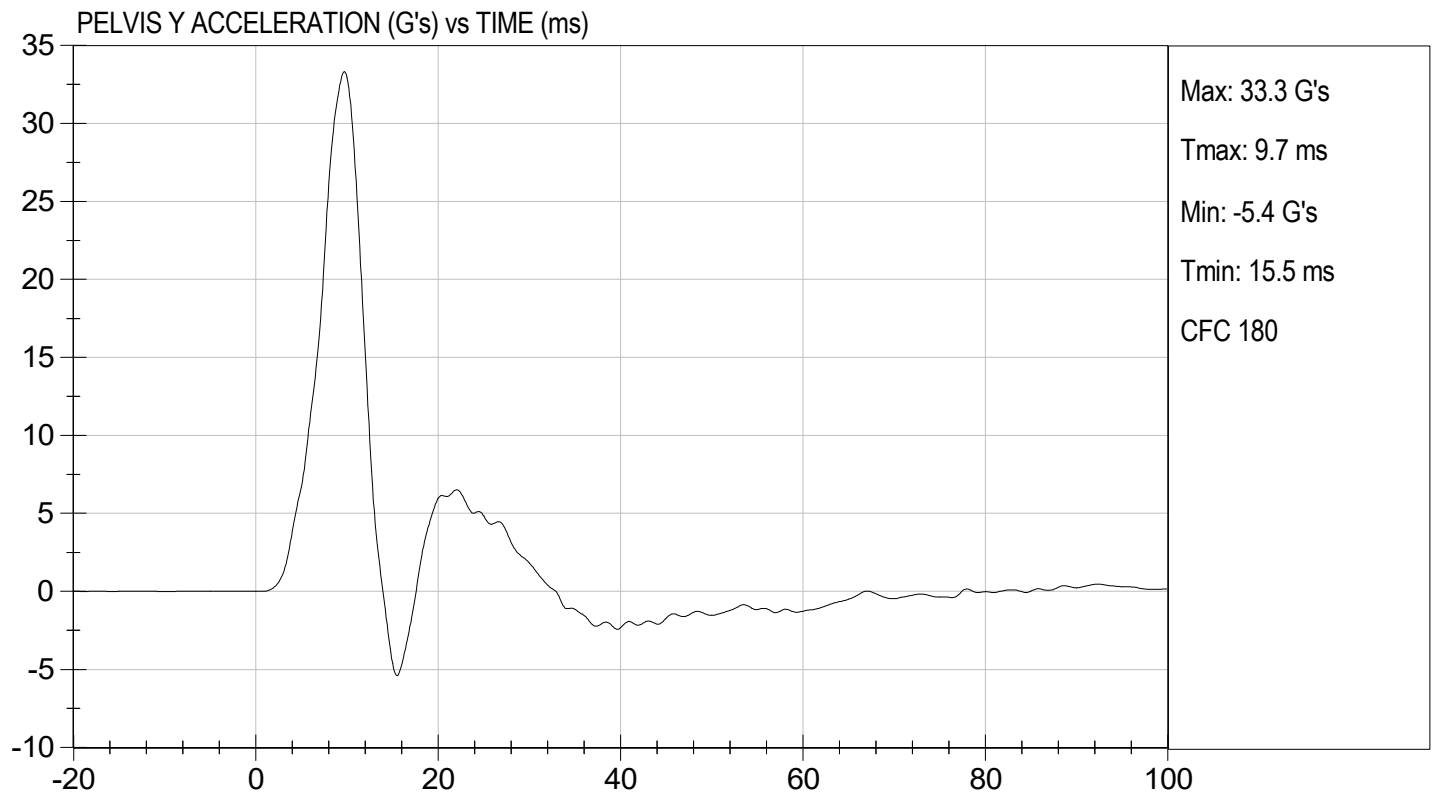
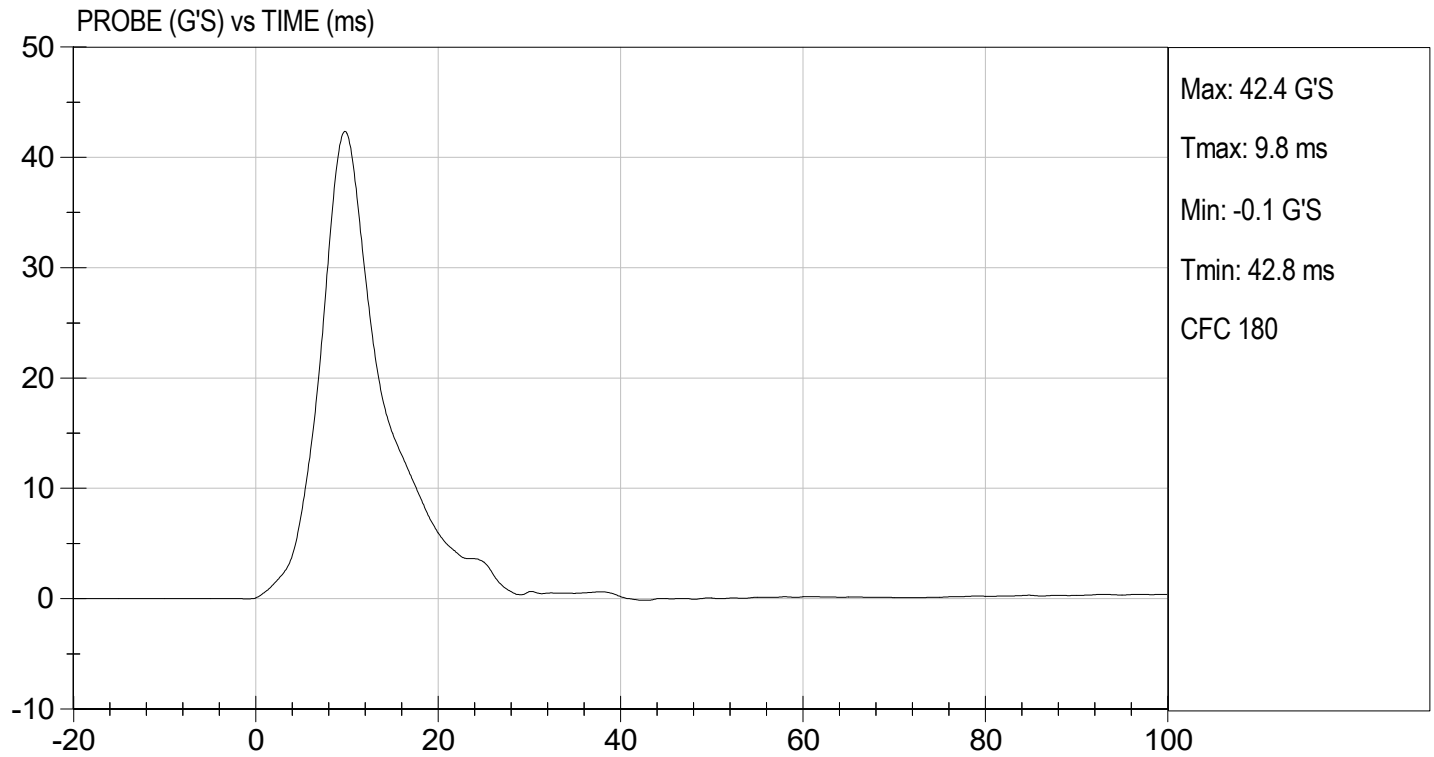
Test Date


Approved By



TEST DESC: ILLIAC
VELOCITY: 14.37 ft/s, 4.38 m/s

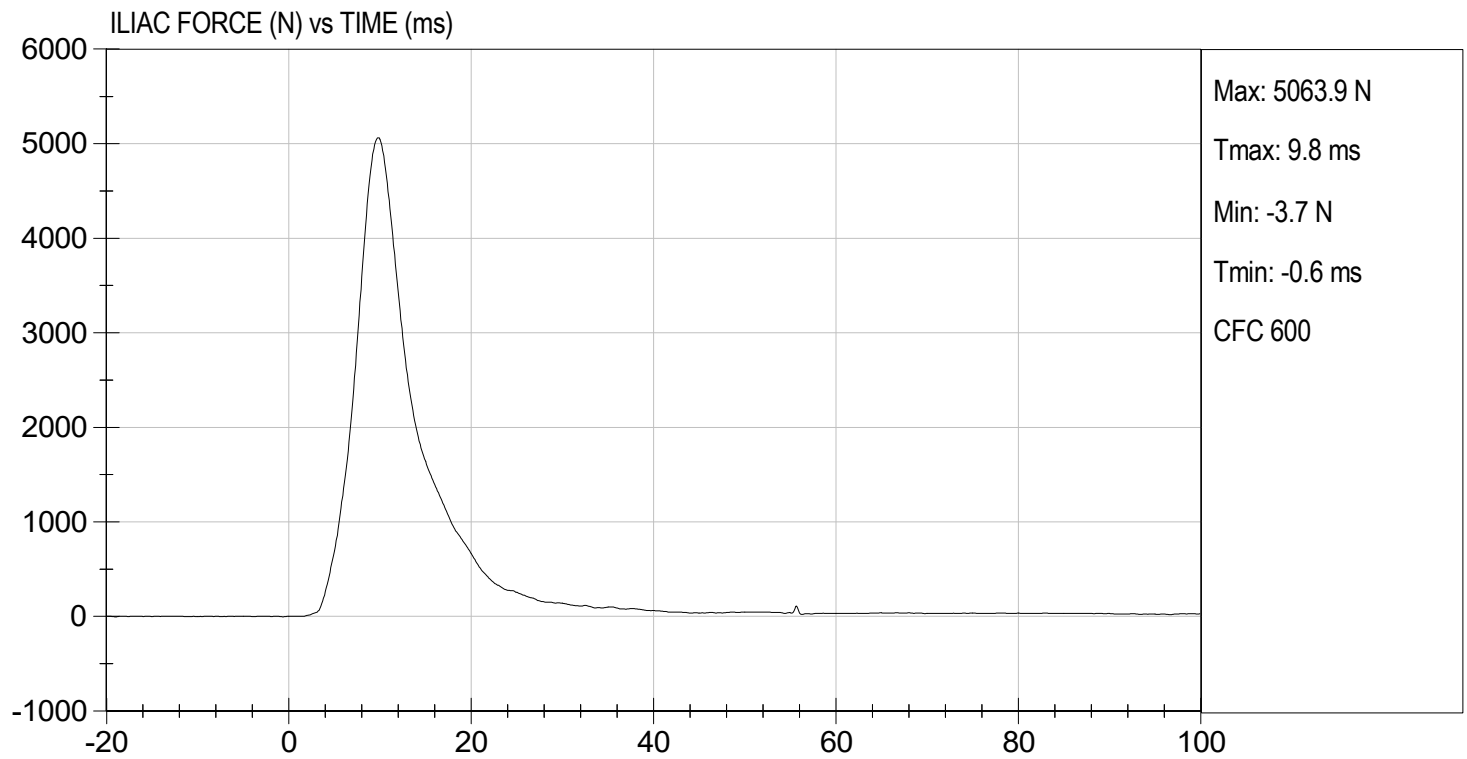
TEST DATE: 07/28/2023
TEST #: D231978





TEST DESC: ILLIAC
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 07/28/2023
TEST #: D231978





SID-IIs Pelvis Plug Certification Test

Plug S/N 17007

Test Number 23905

Report Number 23962

Test Date 8/18/2022 1:02:32 PM

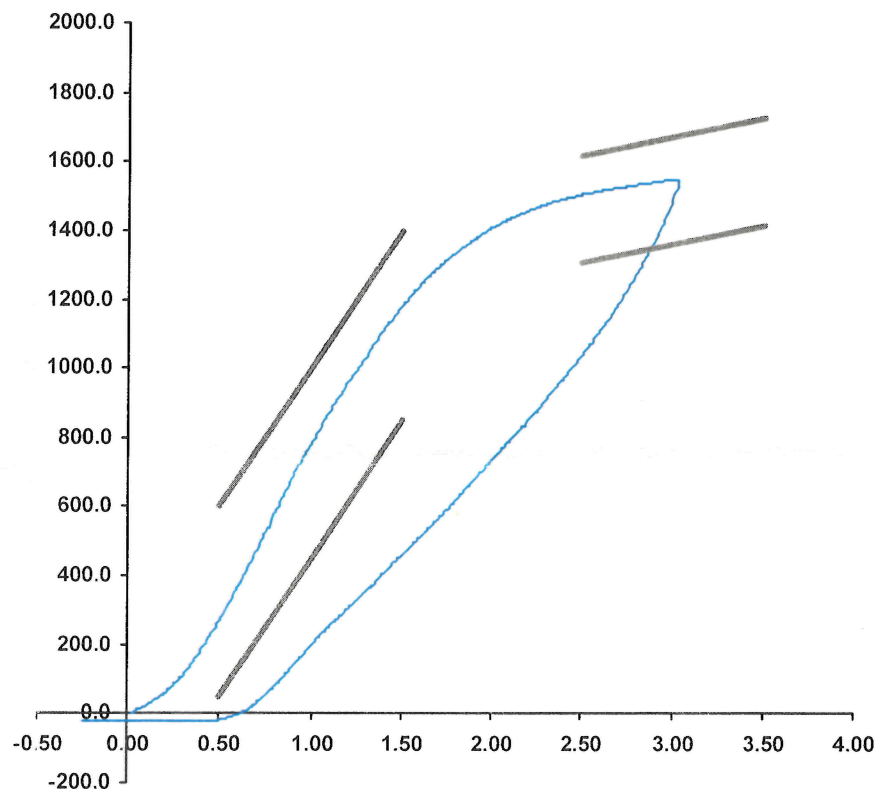
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	274	50	600
Force @ 1.5 mm (N)	1,180	850	1,400
Force @ 2.5 mm (N)	1,507	1,306	1,618
Force @ 3.0 mm (N)	1,550	1,361	1,673

Testing Machine STM-20 5965542
Load Cell S/N (FI360947), Units (LBS) 1000

Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107
SACO Research

18-Aug-22

By :

DC

Date :

8/18/22



SID-IIs Pelvis Plug Certification Test

Plug S/N 14193

Test Number 14333

Report Number 14377

Test Date 7/3/2020 8:30:43 AM

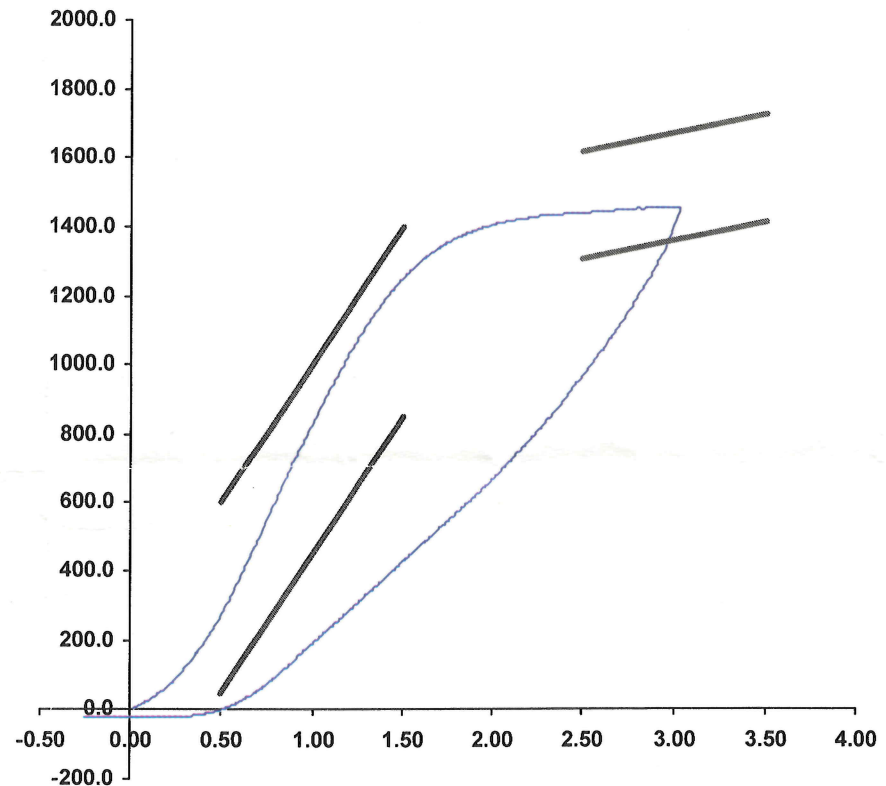
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	276.49	50.00	600.00
Force @ 1.5 mm (N)	1,254.94	850.00	1,400.00
Force @ 2.5 mm (N)	1,442.23	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,459.29	1,361.00	1,673.00

Testing Machine STM-20 5965542
Load Cell S/N (FI360947), Units (LBS) 1000

Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107 03-Jul-20

SACO Research

By : DC Date : 7/3/2020

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

Table 1 – Dummy Instrumentation

				SID-IIs S/N 296			
				Serial Number	Manufacturer	Calibration Date	
Head CG Accelerometers				X	P82109	Endevco	07/06/2023
				Y	P94783	Endevco	07/06/2023
				Z	P94786	Endevco	07/06/2023
				Xr	P94938	Endevco	07/06/2023
				Yr	P96854	Endevco	07/06/2023
				Zr	P97386	Endevco	07/06/2023
Head Angular Rate Sensors				X	ARS15213	DTS	04/07/2023
				Y	ARS15229	DTS	04/07/2023
				Z	ARS15231	DTS	04/07/2023
Displacement Potentiometers	Thoracic Rib	Upper	Y	G012	Servo	07/06/2023	
		Middle	Y	G1163	FTSS	07/06/2023	
		Lower	Y	G1158	FTSS	07/06/2023	
	Abdominal Rib	Upper	Y	G1146	FTSS	07/06/2023	
		Lower	Y	G1126	FTSS	07/06/2023	
Lower Spine Accelerometers (T12)				X	P79614	Endevco	07/06/2023
				Y	P79439	Endevco	07/06/2023
				Z	P79418	Endevco	07/06/2023
Acetabulum Load Cell				Y	ACG269	Denton	04/20/2023
Iliac Wing Load Cell				Y	IWG282	Denton	04/20/2023
Pelvis Plug (struck side)					17007	SACO	08/18/2022
Pelvis Plug (non-struck side)					14193	SACO	07/03/2020

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P82126	Endevco	02/02/2023
Vehicle Center of Gravity	Y	P84440	Endevco	02/02/2023
Vehicle Center of Gravity	Z	T32716	Endevco	02/10/2023
Left Floor Sill	Y	A383097	MSI	06/07/2023
A-Pillar Sill	Y	A390896	MSI	02/01/2023
A-Pillar Low	Y	A416949	MSI	03/30/2023
A-Pillar Mid	Y	A416936	MSI	03/30/2023
B-Pillar Sill	Y	T32719	Endevco	02/10/2023
B-Pillar Low	Y	PCB1316	PCB	02/24/2023
B-Pillar Mid	Y	PCB1429	PCB	02/15/2023
Driver Seat	Y	A416945	MSI	02/15/2023
Engine Top	X	T33445	Endevco	04/05/2023
Engine Top	Y	T33418	Endevco	04/05/2023
Firewall	Y	A383117	MSI	05/15/2023
Right Roof	Y	T29896	Endevco	02/24/2023
Right Floor Sill	Y	PCB399	PCB	07/13/2023
Rear Floorpan	X	A421061	MSI	06/08/2023
Rear Floorpan	Y	A405523	MSI	06/08/2023

Table 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DG6277	FTSS	07/30/2018
Load Cell 2	DG6278	FTSS	07/30/2018
Load Cell 3	DG6279	FTSS	07/30/2018
Load Cell 4	DG6280	FTSS	07/30/2018
Load Cell 5	DG6281	FTSS	07/30/2018
Load Cell 6	DG6283	FTSS	07/30/2018
Load Cell 7	DG6284	FTSS	07/30/2018
Load Cell 8	DG6582	FTSS	07/30/2018