

REPORT NUMBER: SideNCAPPole-MGA-25-019

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

**MAZDA TOYOTA MANUFACTURING U.S.A. INC.
2025 Toyota Corolla Cross L 5-Door SUV
NHTSA No.: M20255105**

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



Test Date: April 23, 2025

Final Report Date: July 25, 2025

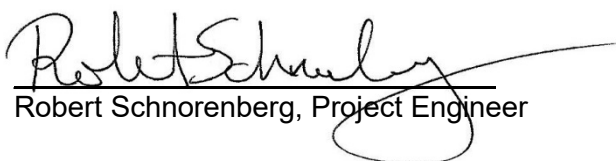
FINAL REPORT

**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: July 25, 2025

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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16. Abstract A 32.20 km/h, 75° oblique impact Side NCAP Test was conducted on the subject 2025 Toyota Corolla Cross L 5-Door SUV 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 April 23, 2025. The impact velocity was 32.18 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.4°C. The test vehicle post-test maximum crush was 330 mm at level 3. The test vehicle's performance was as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Measurement Description</th> <th rowspan="2" style="text-align: center;">Units</th> <th colspan="2" style="text-align: center;">Driver ATD (SID-IIs)</th> </tr> <tr> <th style="text-align: center;">Threshold</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td style="text-align: center;">1000</td> <td style="text-align: center;">292.534</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td style="text-align: center;">g</td> <td style="text-align: center;">82</td> <td style="text-align: center;">49.914</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">5525</td> <td style="text-align: center;">3434.345</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">38*</td> <td style="text-align: center;">20.498</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">45*</td> <td style="text-align: center;">20.462</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	292.534	Resultant Lower Spine Acceleration	g	82	49.914	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3434.345	Maximum Thoracic Rib Deflection	mm	38*	20.498	Maximum Abdomen Rib Deflection	mm	45*	20.462
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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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TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	Purpose and Summary of Test	1
2	Occupant and Vehicle Information / Data Sheets	3
<u>Data Sheet No.</u>		<u>Page No.</u>
1	General Test and Vehicle Parameter Data	4
2	Seat, Seat Belt, Steering Wheel Adjustment and Fuel System Data	8
3	Dummy Longitudinal Clearance Dimensions	11
4	Dummy Lateral Clearance Dimensions	12
5	Camera and Instrumentation Data	13
6	Test Vehicle Accelerometer Locations	14
7	Rigid Pole Load Cell Data	15
8	Post-Test Observations	16
9	Test Vehicle Profile Measurements	18
10	Test Vehicle Exterior Crush Measurements	19
11	FMVSS No. 301 Static Rollover Results	23
12	Dummy/Vehicle Temperature and Humidity Stabilization Data	24
<u>Appendix</u>		
A	Photographs	A
B	Dummy Response Data Plots	B
C	Dummy Qualification and Performance Verification	C
D	Test Equipment and Instrumentation Calibration	D

SECTION 1 PURPOSE AND SUMMARY OF TEST

PURPOSE

This side pole impact test is part of the MY 2025 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 2025 Toyota Corolla Cross L 5-Door SUV. 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 2025 Toyota Corolla Cross L 5-Door SUV. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.18 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin on April 23, 2025. 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	292.534
Resultant Lower Spine Acceleration	g	82	49.914
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3434.345
Maximum Thoracic Rib Deflection	mm	38*	20.498
Maximum Abdomen Rib Deflection	mm	45*	20.462

*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

None.

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: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20255105	Traction Control System (TCS)	Yes
Model Year	2025	Auto-Leveling System	No
Make	Toyota	Automatic Door Locks (ADL)	Yes
Model	Corolla Cross L	Power Window Auto-Reverse	Yes
Body Style	5-Door SUV	Other Optional Feature	No
VIN	7MUAAAAG8SV125594	Driver Front Airbag	Yes
Body Color	Wind Chill Pearl	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	40 km / 25 mi	Driver Head/Torso Airbag	No
Engine Displacement (L)	2.0	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	0	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)	No	Rear Pass. Load Limiter	Yes
		Other Safety Restraint	N/A

Does owner's manual provide instruction to turn off automatic door locks?	Yes
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DATA FROM CERTIFICATION LABEL

Manufactured By	MAZDA TOYOTA MANUFACTURING U.S.A. INC.	GVWR (kg)	1945
Date of Manufacture	02/25	GAWR Front (kg)	1150
Vehicle Type	MPV	GAWR Rear (kg)	1060

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				425	(A)
DSC x 68 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				84	(A-B)

* Rated Cargo and Luggage Weight (RCLW) reduced by 1 kg to account for Load Carrying Capacity Reduction Label.

VEHICLE SEAT TYPE

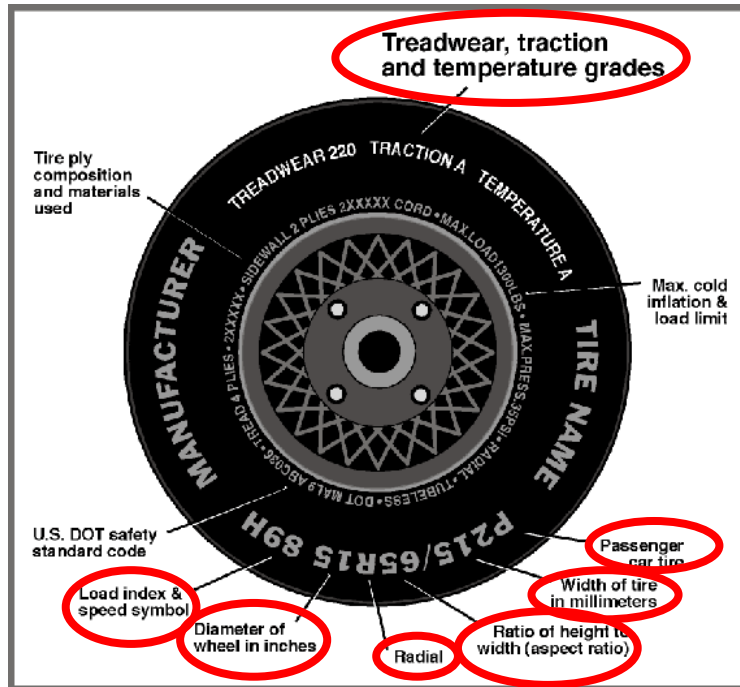
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	X					X	
Rear or Second Row				X	X		
Third Row Seat							

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	230	200
Recommended Tire Size	215/65R17	215/65R17
Tire Size on Vehicle	215/65R17	215/65R17
Tire Manufacturer	Continental	Continental
Tire Model	ProContact TX	ProContact TX
Treadwear	500	500
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Polyamide	1 Polyester, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	99H	99H
Tire Material	Rubber	Rubber
DOT Safety Code Left	1P50F BEYL 0225	1P50F BEYL 0225
DOT Safety Code Right	1P50F BEYL 0125	1P50F BEYL 0225

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	250	250	250	250
Tire Placard	kPa	230	230	200	200
Owner's Manual	kPa	230	230	200	200
As Tested	kPa	230	230	200	200

TEST AXLE VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	443.0	270.5		462.5	327.5		457.0	337.0	
Right	kg	419.5	264.5		423.5	314.0		417.0	322.5	
Ratio	%	61.7%	38.3%		58.0%	42.0%		57.0%	43.0%	
Totals	kg	862.5	535.0	1397.5	886.0	641.5	1527.5	874.0	659.5	1533.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1397.5	(A)
Actual Weight of 1 P572 ATD (SID-IIs) Used	kg	52	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	84	(C)
Calculated Test Vehicle Target Weight (TVTW)	kg	1533.5	(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	As Delivered	As Tested	Fully Loaded	Meets Requirement
Driver Door Sill Angle (front-to-back)*	deg	-1.1	-0.3	0.0	Yes
Front Pass. Door Sill Angle (front-to-back)*	deg	-1.0	-0.2	0.0	Yes
Front Bumper Angle (left-to-right)**	deg	-0.2	-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	1011	1110	1136	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	17	27	28	

* 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	48
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: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025

TEST SURFACE MARKINGS

	Distance from 75° Impact Location Line (mm)
Fore 25 mm Target	919
Aft 25 mm Target	909

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025

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	18.7	12.9	15.8
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	15.8	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: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

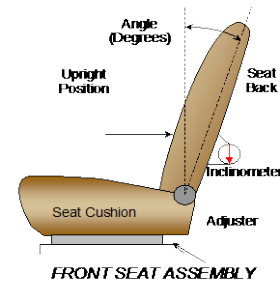
NHTSA No.: M20255105
 Test Date: 4/23/2025

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	260	27	0	0
Front Passenger Seat	260	27	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	53.4	28	-2.8	2
Front Passenger Seat	51.2	28	-2.8	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	3	0 (Lowest as 0) / Fixed Fore-Aft

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

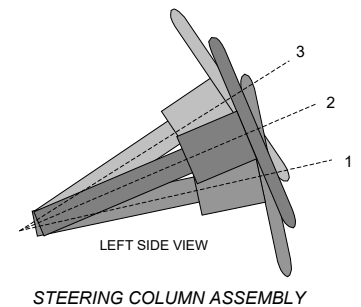
Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
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NHTSA No.: M20255105
 Test Date: 4/23/2025

STEERING COLUMN ADJUSTMENT

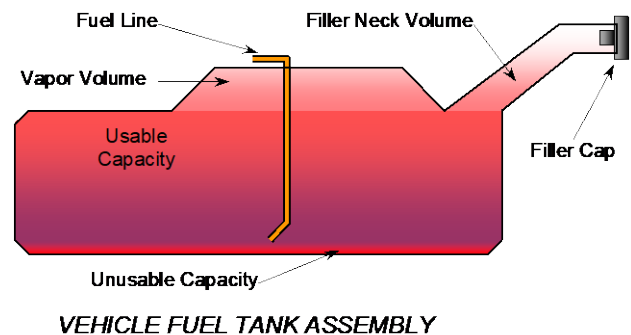
Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

	Wheel Angle (°)	Fore/Aft Position (mm)
Lowermost, Position 1	69.6	
Geometric Center, Position 2	67.6	
Uppermost, Position 3	65.5	
Telescoping Steering Wheel Travel		48
Test Position	67.6	24



FUEL PUMP

The vehicle is equipped with an electronic fuel pump. The fuel pump will run when the engine is running. The pump will also briefly run when the ignition key is turned to the “on” position. The filler neck is located on the driver’s side.



FUEL TANK CAPACITY DATA

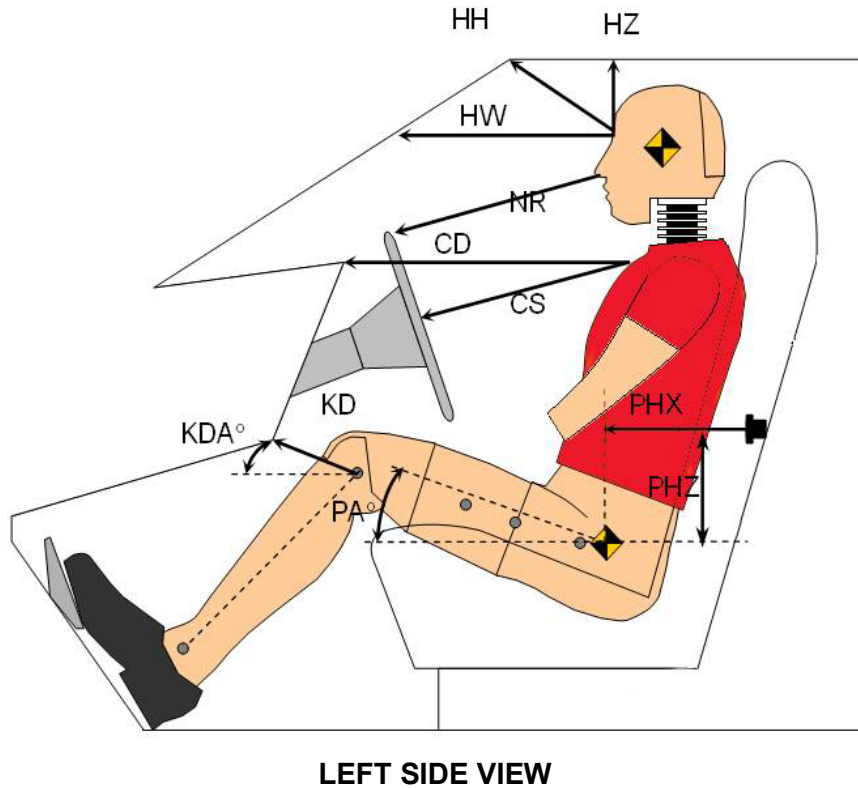
	Liters
Usable Capacity of Standard Tank (see S1 – Vehicle Setup Information)	47.0
Usable Capacity of Optional Tank (see S1 – Vehicle Setup Information)	
Usable Capacity of Standard Tank as Specified in Owner’s Manual	47.0
Usable Capacity of Optional Tank as Specified in Owner’s Manual	
93% of Usable Capacity	43.7
Actual Amount of Solvent Used	43.9
1/3 of Usable Capacity	15.7

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: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

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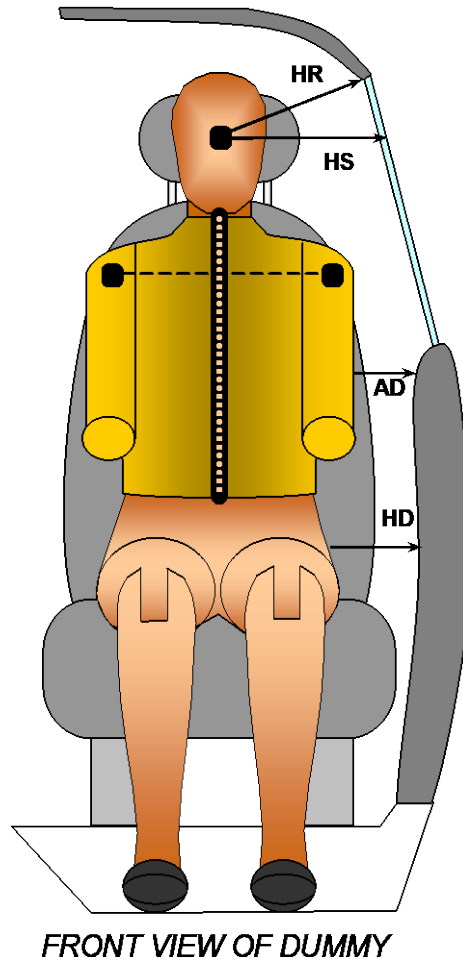


Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	300	
HW	Head to Windshield	664	
HZ	Head to Roof Liner	210	
NR	Nose to Rim/Seat Back	234	
CD	Chest to Dashboard/Seat Back	393	
CS	Chest to Steering Wheel	162	
KDL / KDAL	Left Knee to Dash/Seat Back	122	57.5
KDR / KDAL	Right Knee to Dash/Seat Back	107	39.5
PAX	Pelvic Tilt Angle X		21.6
PAY	Pelvic Tilt Angle Y		-0.5
PHX	Hip Point to Striker (X-Axis)	335	
PHZ	Hip Point to Striker (Z-Axis)	233	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
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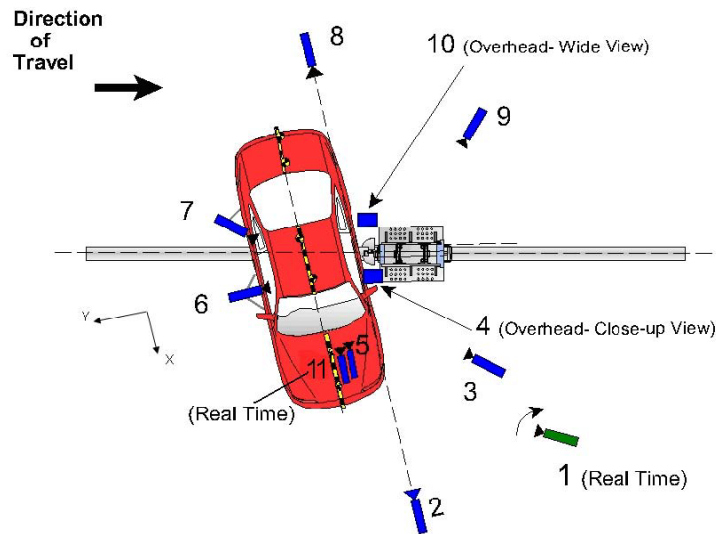


Code	Measurement Description	Driver
		Length (mm)
HR	Head to Side Header	248
HS	Head to Side Window	360
AD	Arm to Door	184
HD	Hip Point to Door	153

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025



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	8020	-130	-1575	35	1000
3	Impact Side 45° Forward	4480	-1940	-1555	12	1000
4	Overhead Closeup	0	0	-6700	85	1000
5	Onboard – Driver Front				16	1000
6	Onboard – Driver Side				8.5	1000
7	Onboard – Driver Rear				8.5	1000
8	Rear Ground Level	-6595	-350	-1580	24	1000
9	Impact Side 45° Rearward	-3025	-3500	-1605	12	1000
10	Overhead Wide View	95	890	-6540	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

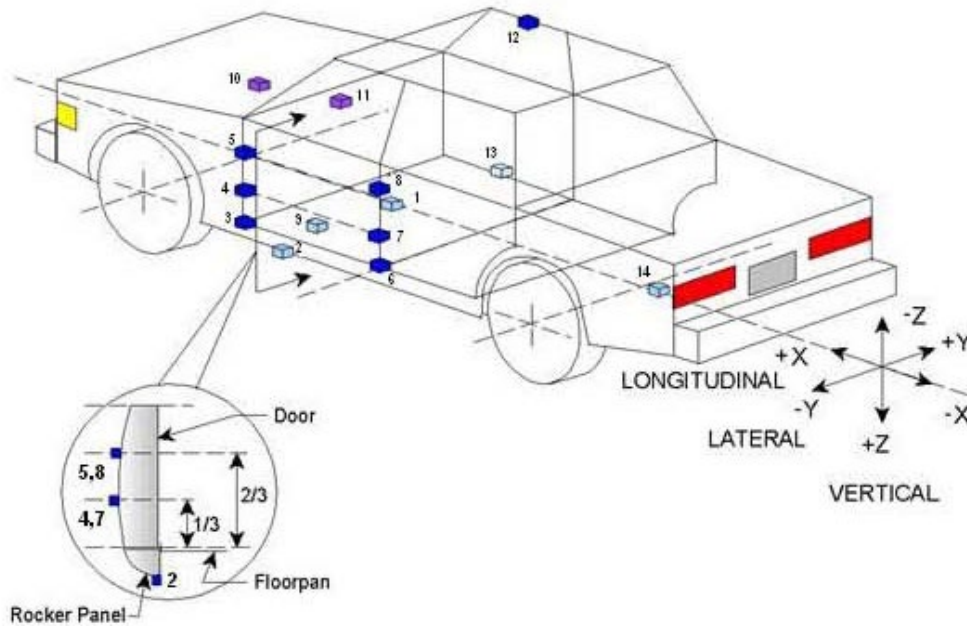
INSTRUMENTATION

	Number of Channels
Driver Dummy	19
Vehicle Structure	18
Pole Load Cells	8
Total	45

DATA SHEET NO. 6 TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025



TEST VEHICLE ACCELEROMETER LOCATIONS

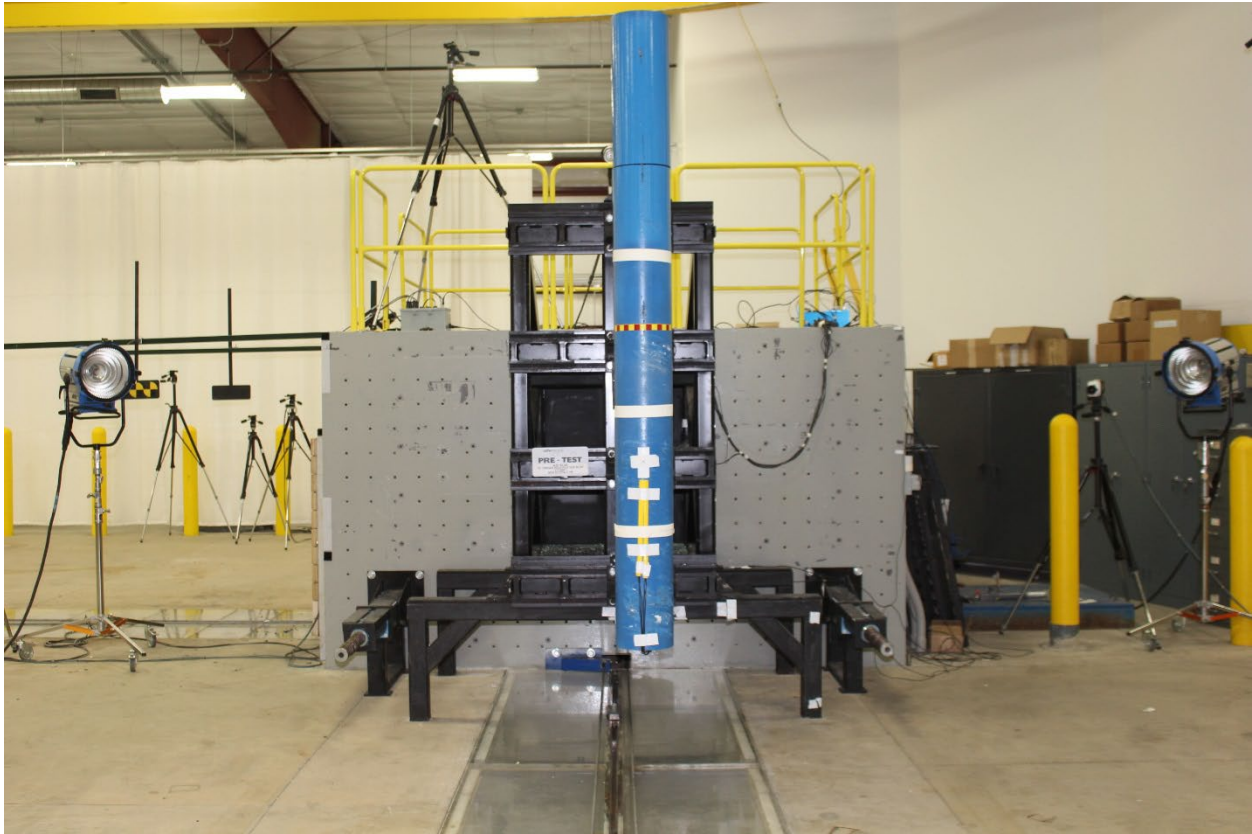
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2401	-199	-258
2	Left Floor Sill	2823	-706	-256
3	A Pillar Sill	3020	-708	-254
4	A Pillar Low	2988	-819	-475
5	A Pillar Mid	3017	-809	-818
6	B Pillar Sill	1960	-705	-262
7	B Pillar Low	1954	-724	-655
8	B Pillar Mid	1899	-703	-827
9	Driver Seat Track	2058	-382	-322
10	Engine Top	3674	3	-876
11	Firewall	3257	36	-856
12	Right Roof	1976	506	-1595
13	Right Sill	2811	705	-270
14	Rear Floorpan	1002	23	-612

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: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025



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: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver Dummy (SID-IIs)
Face	Curtain Airbag, Seatback
Top of Head	Curtain Airbag, Headrest, Seatback
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest, Seatback
Left Shoulder	Side Torso/Pelvis Airbag, Seatback
Upper Torso	Side Torso/Pelvis Airbag, Seatback
Lower Torso	Side Torso/Pelvis Airbag, Seatback
Left Hip	Side Torso/Pelvis Airbag, Seatback, Seat Cushion
Left Knee	None

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch
	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	No Separation
Windshield Damage	Cracked
Side Window Damage	LF window broken
Other Notable Effects	Windshield separated at a-pillar

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side 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:				

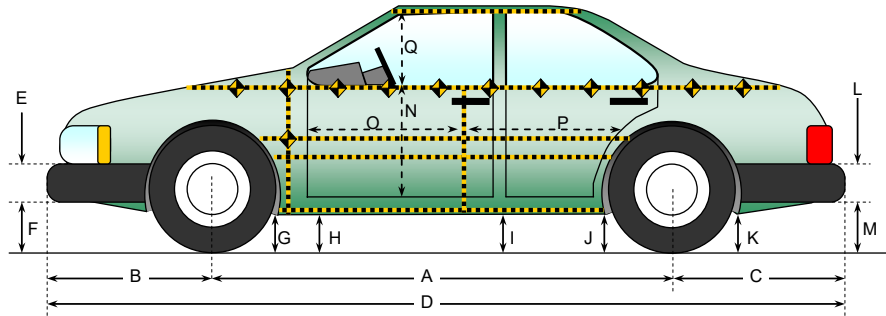
SPEED, ANGLE AT IMPACT, AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1104
Actual Impact Point (Aft of Front Axle)	mm		1110
Horizontal Offset (+forward / -rearward)	mm	+/- 38 of Intended Impact Point	-6
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	degrees	75 +/- 3	75.6
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.18
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.16

DATA SHEET NO. 9
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025



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

LEFT SIDE VIEW

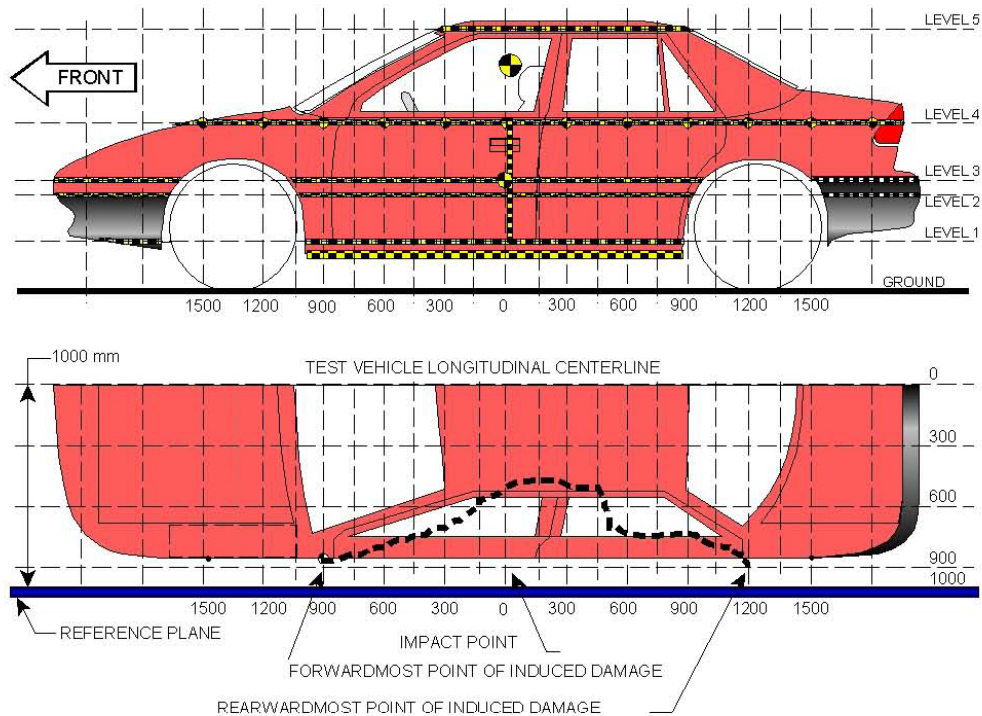
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Change
A	Wheelbase	2642	2591	-51
B	Front Axle to FSOV	946	958	12
C	Rear Axle to RSOV	861	870	9
D	Total Vehicle Length at Centerline	4449	4419	-30
E	Front Bumper Thickness	124	126	2
F	Front Bumper Bottom to Ground	479	503	24
G	Sill Height at Front Wheel Well	252	246	-6
H	Sill Height at Front Door Leading Edge	248	241	-7
I	Sill Height at B-Pillar	259	278	19
J1	Sill Height at Rear Wheel Well	243	266	23
J2	Pinch Weld Height at Rear Wheel Well	254	270	16
K	Sill Height Aft of Rear Wheel Well	274	278	4
L	Rear Bumper Thickness	97	97	0
M	Rear Bumper Bottom to Ground	500	495	-5
N	Sill Height to Bottom of Front Window Sill	640	665	25
O	Front Door Leading Edge to Impact CL	601	513	-88
P	Rear Door Trailing Edge to Impact CL	1197	1098	-99
Q	Front Window Opening	379	373	-6
R	Right Side Length	3690	3696	6
S	Left Side Length	3693	3613	-80
T	Vehicle Width at B-Pillars	1778	1661	-117
U	Front Wheel Track Width	1565		
V	Rear Wheel Track Width	1554		

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
Test Date: 4/23/2025



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	482	328	75
2	Occupant H-Point	661	329	75
3	Mid Door	687	330	75
4	Window Sill	1066	283	75
5	Window Top	1541	109	0

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025

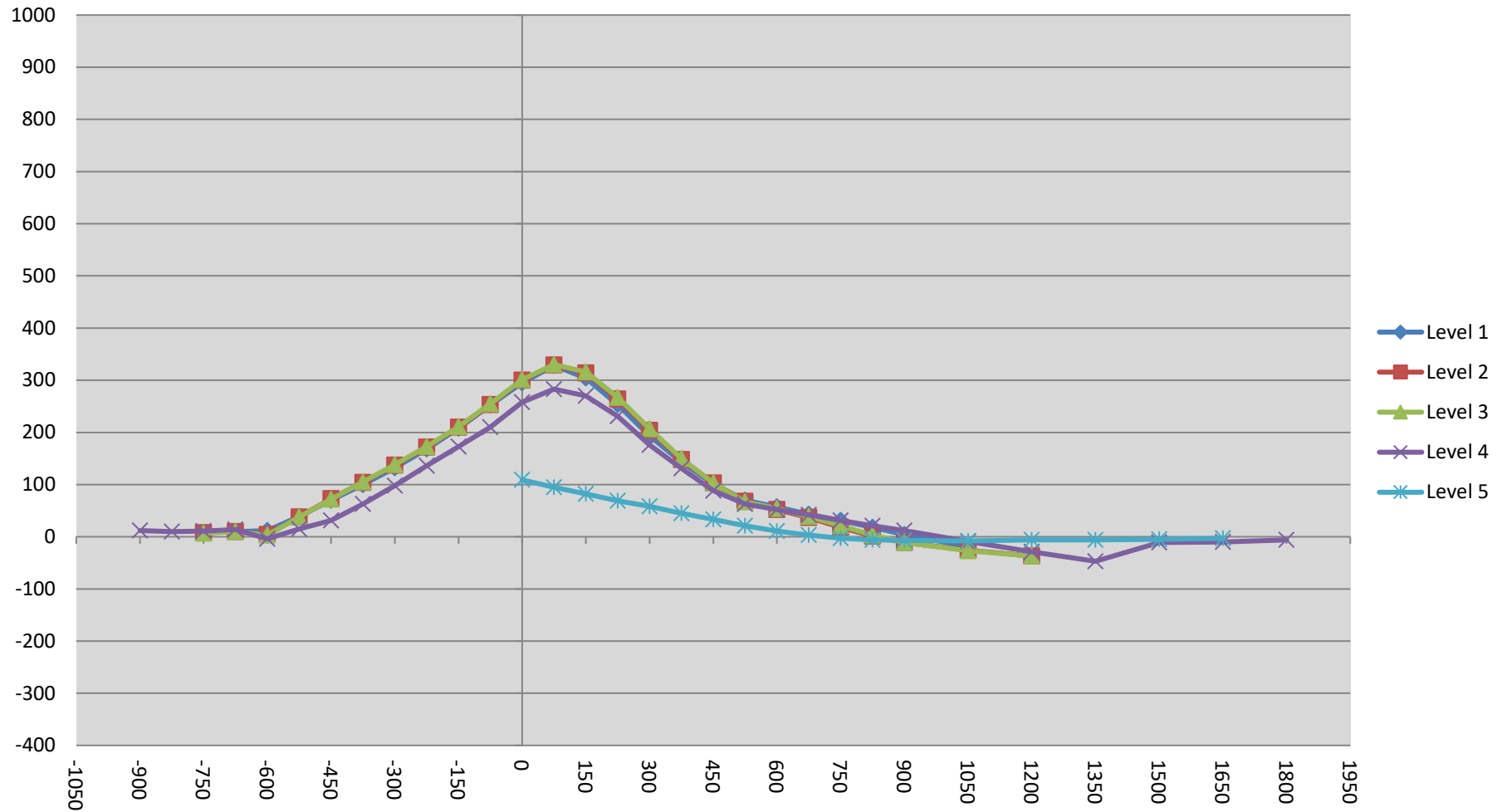
Pre-test measurements are taken when the vehicle is in the “As Tested” weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point.

	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				785					773					12	
-825				791					781					10	
-750		911	910	796			903	903	785			8	7	11	
-675	909	901	902	802		899	891	892	788		10	10	10	14	
-600	894	896	895	804		882	892	892	808		12	4	3	-4	
-525	890	892	892	804		851	854	854	789		39	38	38	15	
-450	888	891	891	804		818	818	819	773		70	73	72	31	
-375	889	891	892	804		789	787	787	741		100	104	105	63	
-300	890	891	892	807		758	754	754	709		132	137	138	98	
-225	891	892	893	811		723	720	720	675		168	172	173	136	
-150	892	892	893	817		684	682	682	644		208	210	211	173	
-75	893	892	893	822		641	639	638	612		252	253	255	210	
0	893	892	893	827	569	598	592	592	569	460	295	300	301	258	109
75	894	892	893	832	578	566	563	563	549	483	328	329	330	283	95
150	893	892	892	837	586	589	578	576	567	504	304	314	316	270	82
225	893	891	892	841	589	640	627	625	610	520	253	264	267	231	69
300	893	890	891	843	592	700	686	684	667	534	193	204	207	176	58
375	892	890	890	846	594	749	742	740	715	549	143	148	150	131	45
450	891	889	889	848	594	790	786	786	760	561	101	103	103	88	33
525	889	887	887	849	594	819	819	820	786	573	70	68	67	63	21
600	887	885	886	849	593	830	833	832	797	582	57	52	54	52	11
675	884	884	885	849	591	841	847	846	807	588	43	37	39	42	3
750	882	883	884	848	589	851	865	863	817	592	31	18	21	31	-3
825	881	883	883	847	587	863	882	880	826	593	18	1	3	21	-6
900	880	885	885	847	585	876	896	896	835	592	4	-11	-11	12	-7
1050	884	895	896	843	579	903	921	923	852	587	-19	-26	-27	-9	-8
1200		907	908	831	571		944	945	860	577		-37	-37	-29	-6
1350				834	559				881	565				-47	-6
1500				843	543				854	548				-11	-5
1650				840	519				850	522				-10	-3
1800				834					840					-6	
1950															
2100															
2250															
2400															
2550															
2700															

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
Test Program: NCAP Side Pole Impact Test

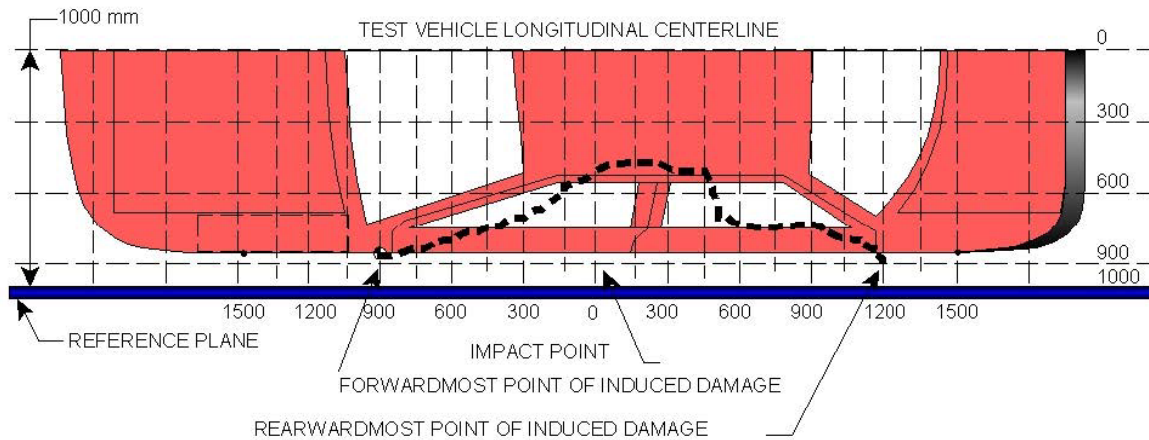
NHTSA No.: M20255105
Test Date: 4/23/2025



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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	525	3	180	113	67
2	316	3	302	109	193
3	63	3	436	107	329
4	-165	3	311	107	204
5	-382	3	212	108	104
6	-600	3	108	105	3

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

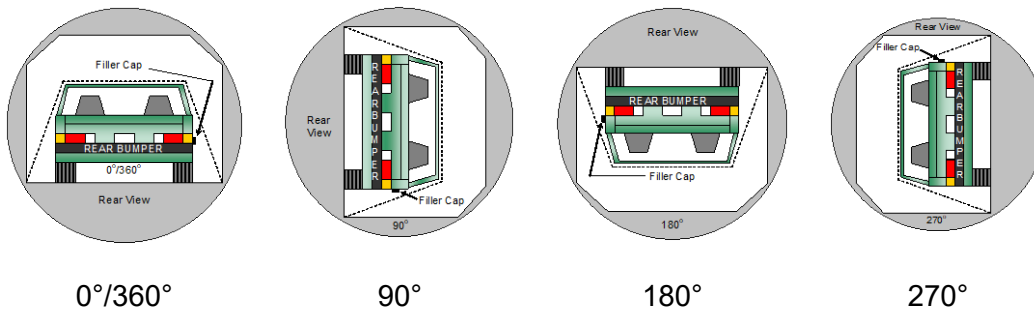
NHTSA No.: M20255105
 Test Date: 4/23/2025

Test Time: 12:19 pm

Temperature: 21.4°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°	110	300	410
90° to 180°	111	300	411
180° to 270°	108	300	408
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	

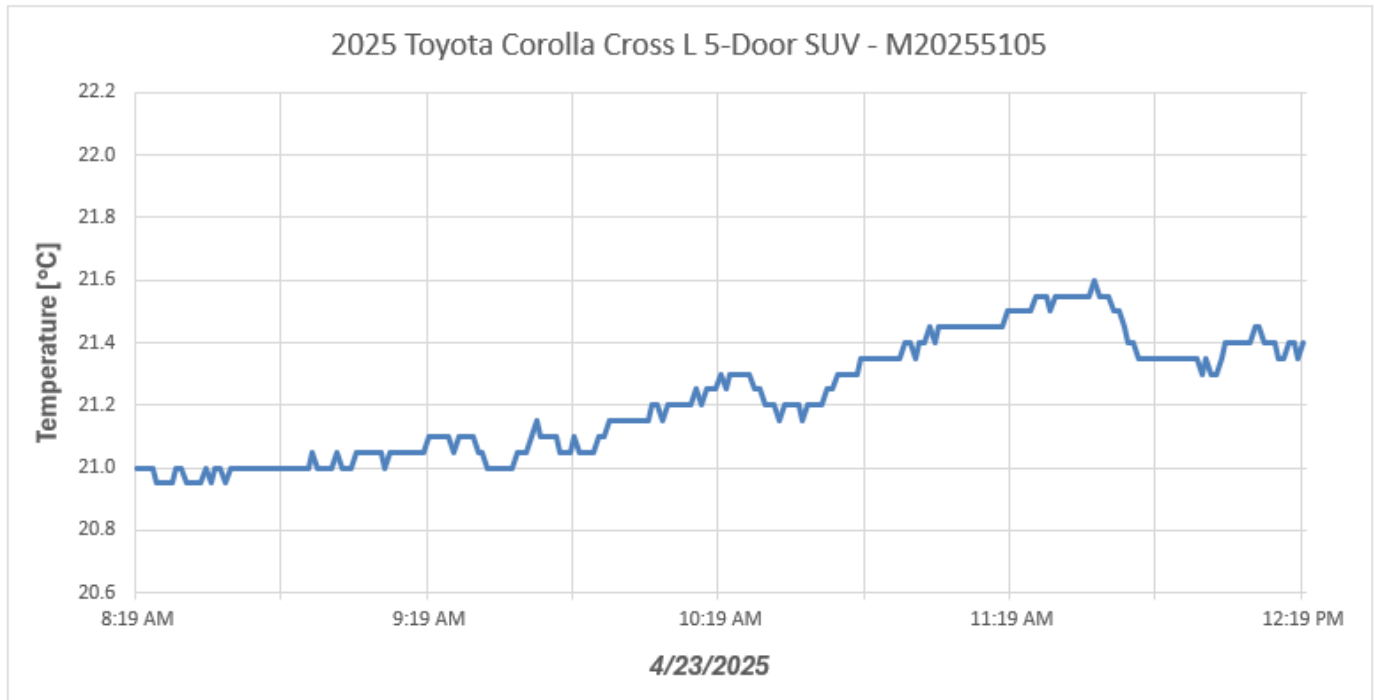
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

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

Test Vehicle: 2025 Toyota Corolla Cross L 5-Door SUV
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: M20255105
 Test Date: 4/23/2025



Serial #	Description	Maximum	Average	Minimum	Units
W2922089	VSC South Hall - Temp (3018)	21.60	21.22	20.95	°C

**APPENDIX A
PHOTOGRAPHS**

TABLE OF PHOTOGRAPHS

		<u>Page No.</u>
Photo No. 001	As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle	A-1
Photo No. 002	As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle	A-1
Photo No. 003	Pre-Test Frontal View of Test Vehicle	A-2
Photo No. 004	Post-Test Frontal View of Test Vehicle	A-2
Photo No. 005	Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-3
Photo No. 006	Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-3
Photo No. 007	Pre-Test Left Side View of Test Vehicle	A-4
Photo No. 008	Post-Test Left Side View of Test Vehicle	A-4
Photo No. 009	Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-5
Photo No. 010	Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-5
Photo No. 011	Pre-Test Rear View of Test Vehicle	A-6
Photo No. 012	Post-Test Rear View of Test Vehicle	A-6
Photo No. 013	Pre-Test Right Side View of Test Vehicle	A-7
Photo No. 014	Post-Test Right Side View of Test Vehicle	A-7
Photo No. 015	Pre-Test Overhead View of Test Area	A-8
Photo No. 016	Post-Test Overhead View of Test Area	A-8
Photo No. 017	Pre-Test Left Side View of Pole Positioned Against Side of Vehicle	A-9
Photo No. 018	Pre-Test Right Side View of Pole Positioned Against Side of Vehicle	A-9
Photo No. 019	Pre-Test Close-Up View of Impact Point Target	A-10
Photo No. 020	Post-Test Close-Up View of Impact Point Target Showing Impact Location	A-10
Photo No. 021	Pre-Test Front Close-Up View of Dummy Head and Chest	A-11
Photo No. 022	Post-Test Front Close-Up View of Dummy	A-11
Photo No. 023	Pre-Test Left Side View of Dummy Showing Belt and Chalking	A-12
Photo No. 024	Pre-Test Left Side View of Dummy Shoulder and Door Top View	A-12
Photo No. 025	Post-Test Left Side View of Dummy Shoulder and Door Top View	A-13
Photo No. 026	Pre-Test Front View of Seat Back Prior to Dummy Positioning	A-13
Photo No. 027	Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint	A-14
Photo No. 028	Pre-Test Front View of Seat Pan Prior to Dummy Positioning	A-14
Photo No. 029	Pre-Test Overhead View of Dummy Thighs on Seat Pan	A-15

		<u>Page No.</u>
Photo No. 030	Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket	A-15
Photo No. 031	Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level	A-16
Photo No. 032	Pre-Test Placement of Dummy's Feet	A-16
Photo No. 033	Pre-Test View of Belt Anchorage for Dummy	A-17
Photo No. 034	Pre-Test Left Side View of Steering Wheel	A-17
Photo No. 035	Pre-Test View of Disengaged Parking Brake	A-18
Photo No. 036	Pre-Test View of Parking Brake	A-18
Photo No. 037	Pre-Test Close-Up Left Side View of Driver Seat Track	A-19
Photo No. 038	Pre-Test Close-Up Left Side View of Driver Seat Back	A-19
Photo No. 039	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-20
Photo No. 040	Pre-Test Dummy and Door Clearance View	A-20
Photo No. 041	Post-Test Dummy and Door Clearance View	A-21
Photo No. 042	Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-21
Photo No. 043	Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-22
Photo No. 044	Pre-Test Inner Door Panel View	A-22
Photo No. 045	Post-Test Inner Door Panel View Showing Dummy Contact Location	A-23
Photo No. 046	Post-Test Dummy Close-Up Head Contact with Vehicle Interior View	A-23
Photo No. 047	Post-Test Dummy Close-Up Head Contact with Side Air Bag View	A-24
Photo No. 048	Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View	A-24
Photo No. 049	Post-Test Dummy Close-Up Torso Contact with Side Air Bag View	A-25
Photo No. 050	Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-25
Photo No. 051	Post-Test Dummy Close-Up Pelvis Contact with Side Air Bag View	A-26
Photo No. 052	Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View	A-26
Photo No. 053	Post-Test Right Side View of Dummy and Rear Seat of Occupant Compartment	A-27
Photo No. 054	Post-Test Inner Rear Passenger Torso Air Bag Deployment View	A-27
Photo No. 055	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-28
Photo No. 056	Post-Test View of Fuel Filler Cap or Fuel Filler Neck	A-28
Photo No. 057	Close-Up View of Vehicle's Certification Label	A-29

		<u>Page No.</u>
Photo No. 058	Close-Up View of Vehicle's Tire Information Placard or Label	A-29
Photo No. 058a	Close-Up View of Vehicle Load Carrying Capacity Reduction Label	A-30
Photo No. 059	Pre-Test Pole Barrier Front View	A-30
Photo No. 060	Post-Test Pole Barrier Front View	A-31
Photo No. 061	Pre-Test Pole Barrier Side View	A-31
Photo No. 062	Post-Test Pole Barrier Side View	A-32
Photo No. 063	Pre-Test Ballast View	A-32
Photo No. 064	Post-Test Primary and Redundant Speed Trap Read-Out	A-33
Photo No. 065	FMVSS No. 301 Static Rollover 0 Degrees	A-33
Photo No. 066	FMVSS No. 301 Static Rollover 90 Degrees	A-34
Photo No. 067	FMVSS No. 301 Static Rollover 180 Degrees	A-34
Photo No. 068	FMVSS No. 301 Static Rollover 270 Degrees	A-35
Photo No. 069	FMVSS No. 301 Static Rollover 360 Degrees	A-35
Photo No. 070	Impact Event	A-36
Photo No. 071	Monroney Label	A-36
Photo No. 072	Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-37
Photo No. 073	Post-Test View of Shattered Vehicle Inner Door Panel	A-37



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

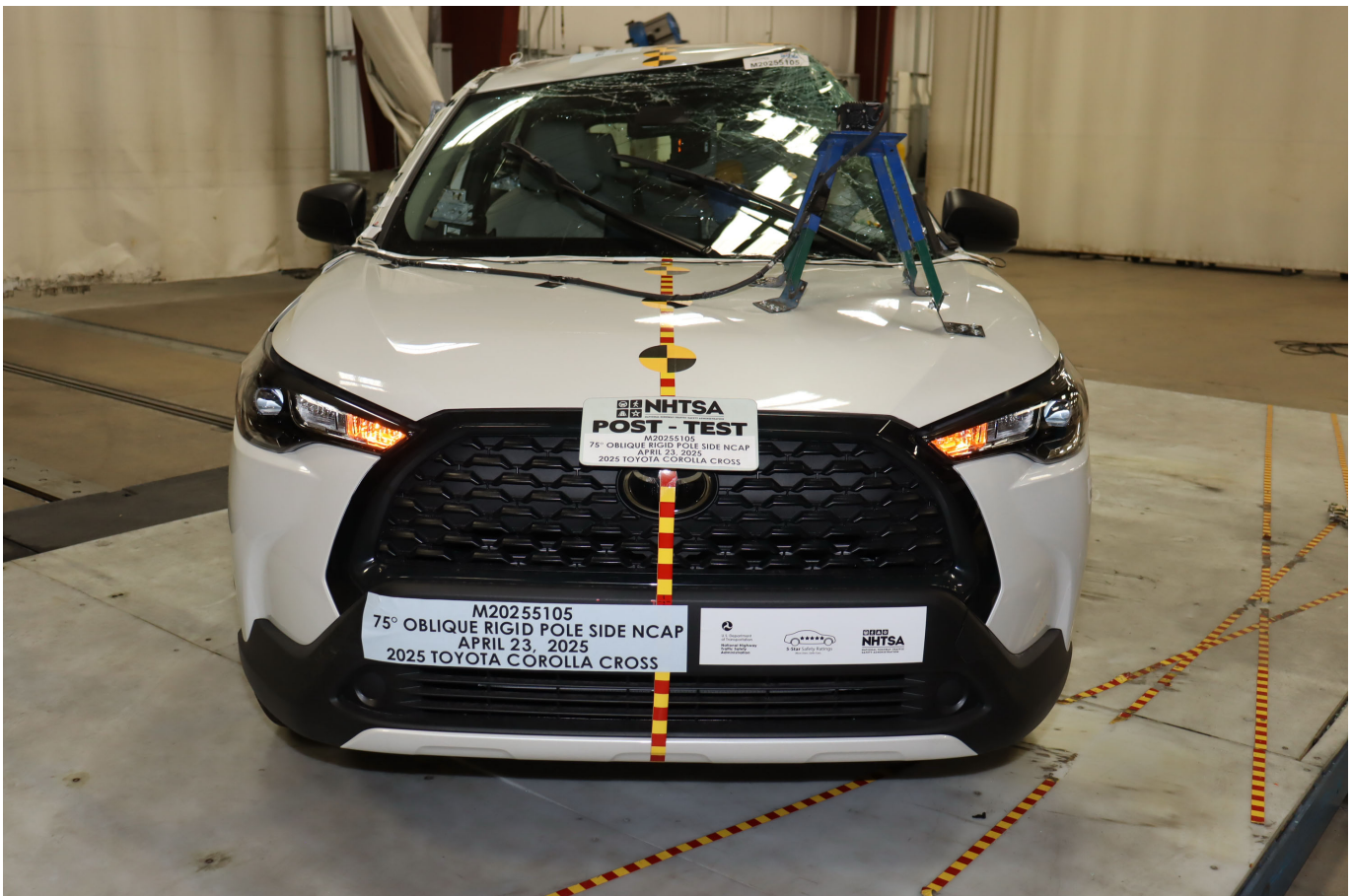


Photo No. 004 - Post-Test Frontal View of Test Vehicle



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

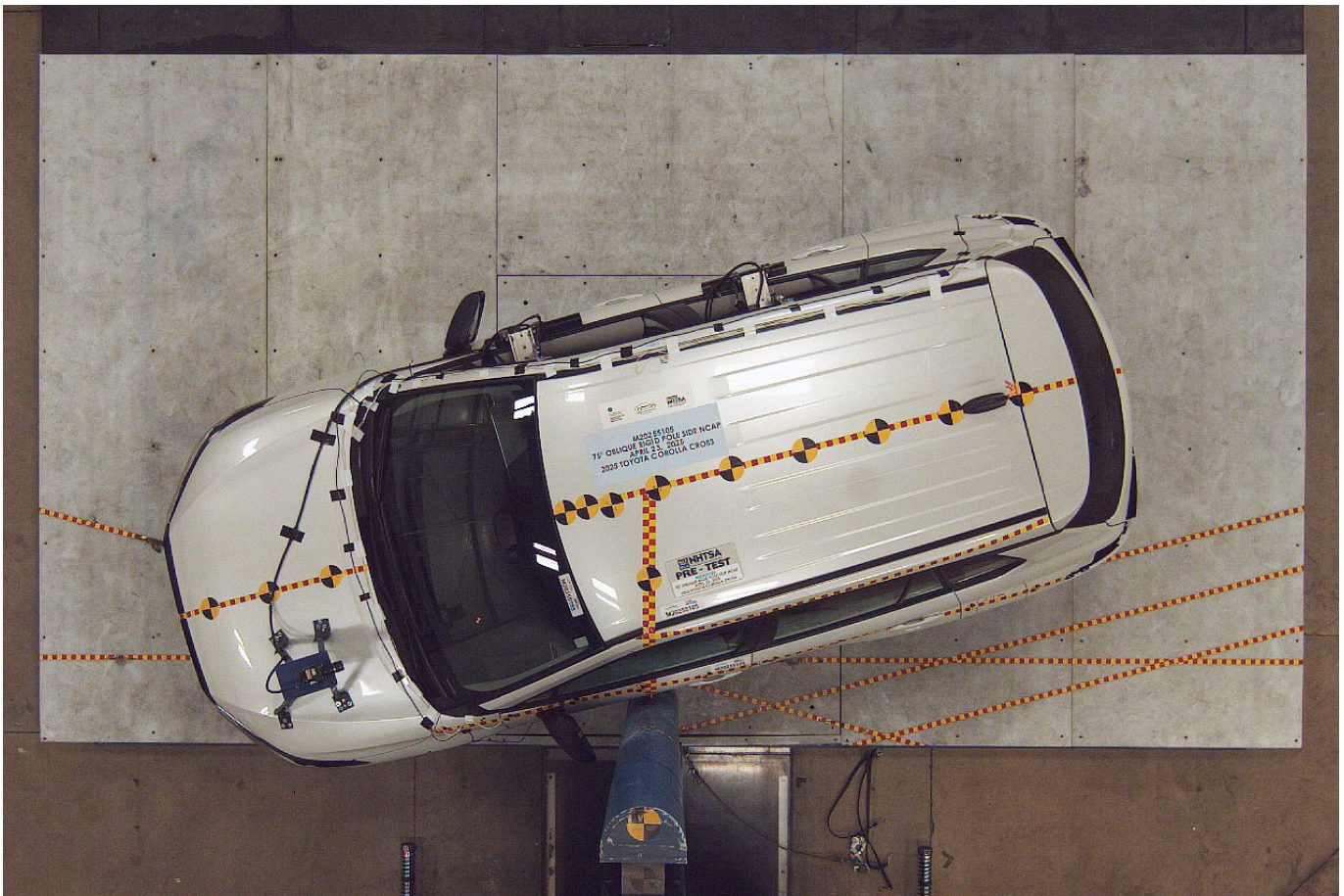


Photo No. 015 - Pre-Test Overhead View of Test Area

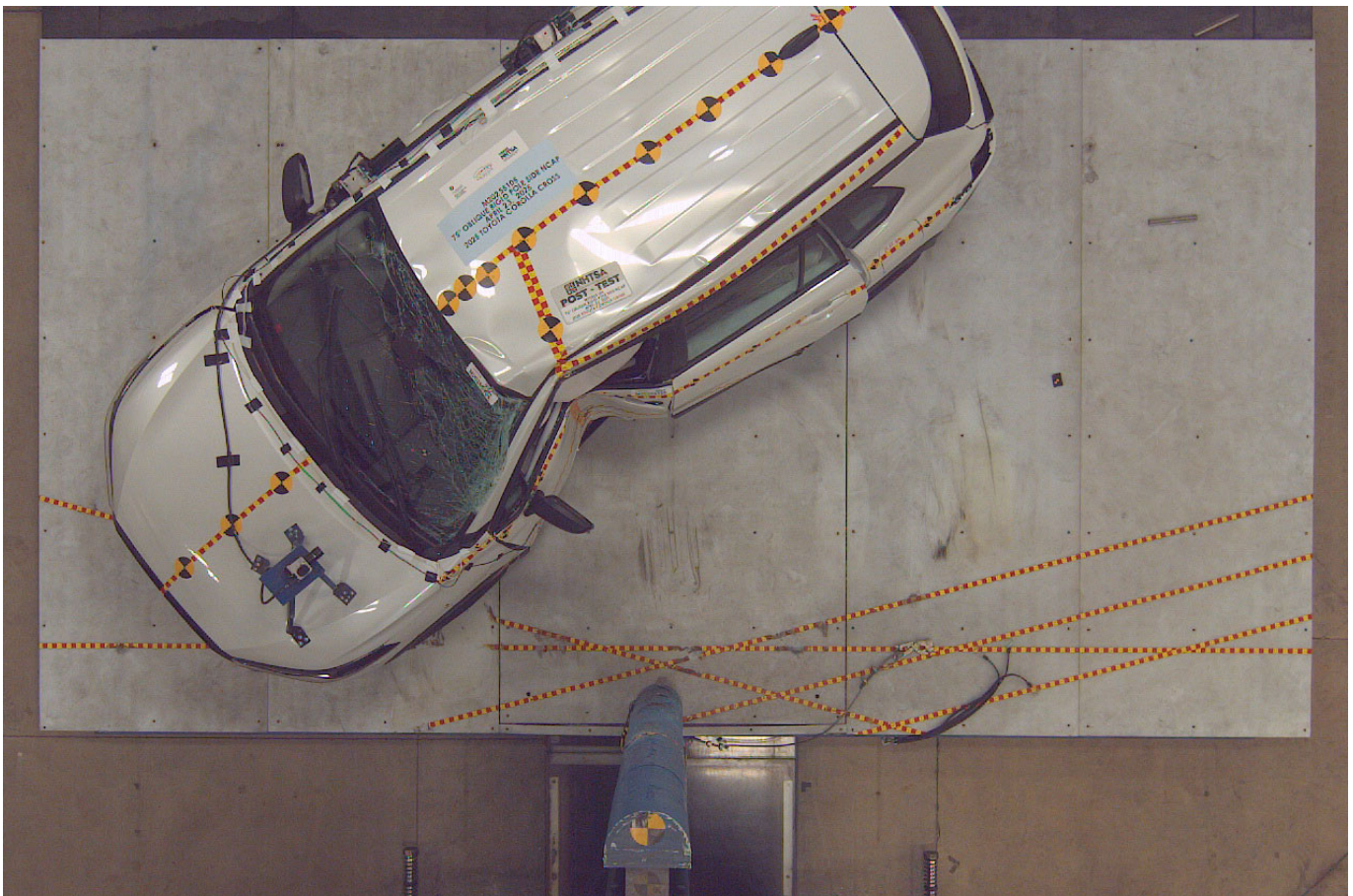


Photo No. 016 - Post-Test Overhead View of Test Area



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



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

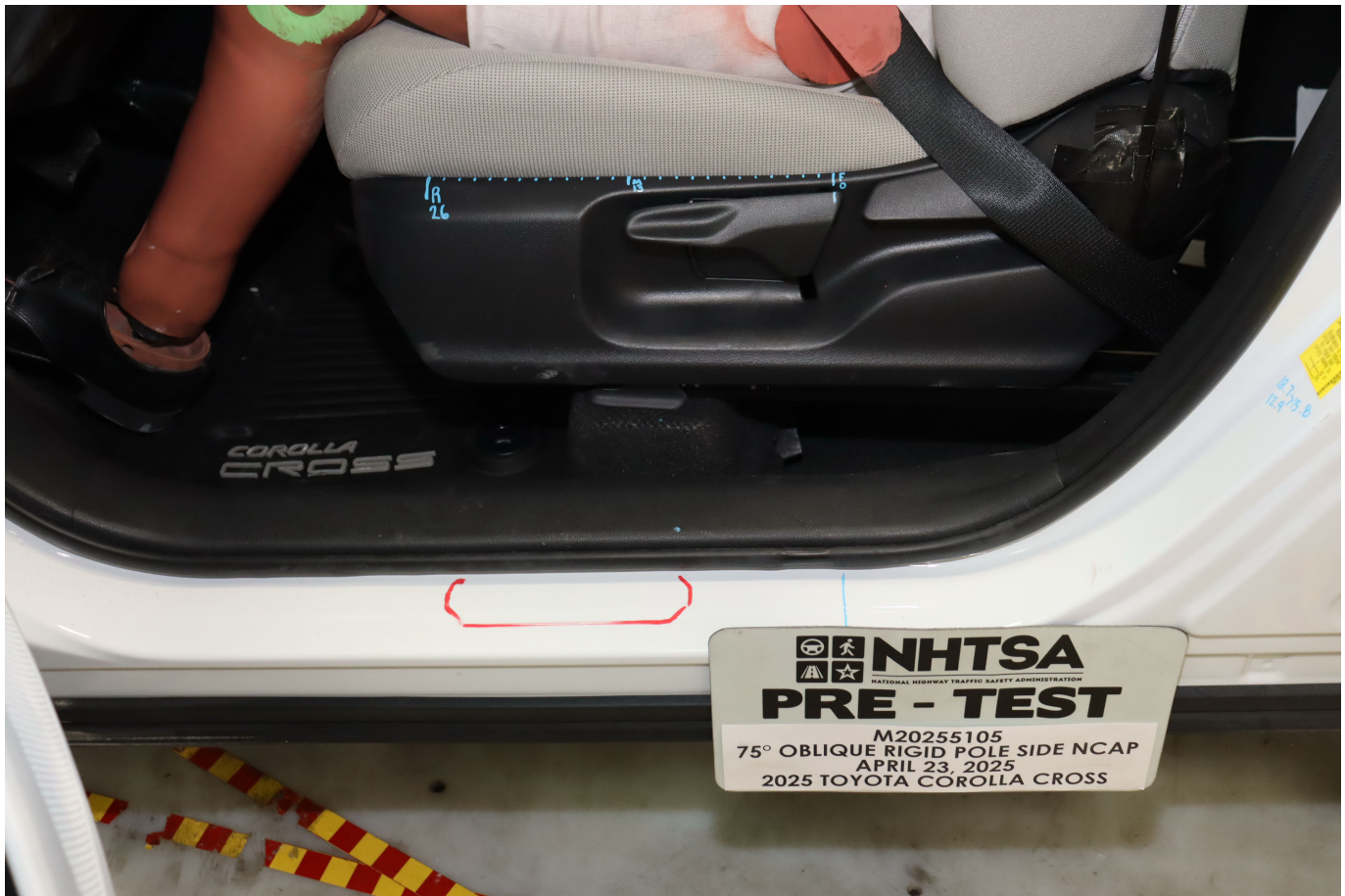


Photo No. 037 - Pre-Test Close-Up Left Side View of Driver Seat Track



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

PHOTOGRAPH NOT APPLICABLE

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. 058a - Close-Up View of Vehicle Load Carrying Capacity Reduction Label

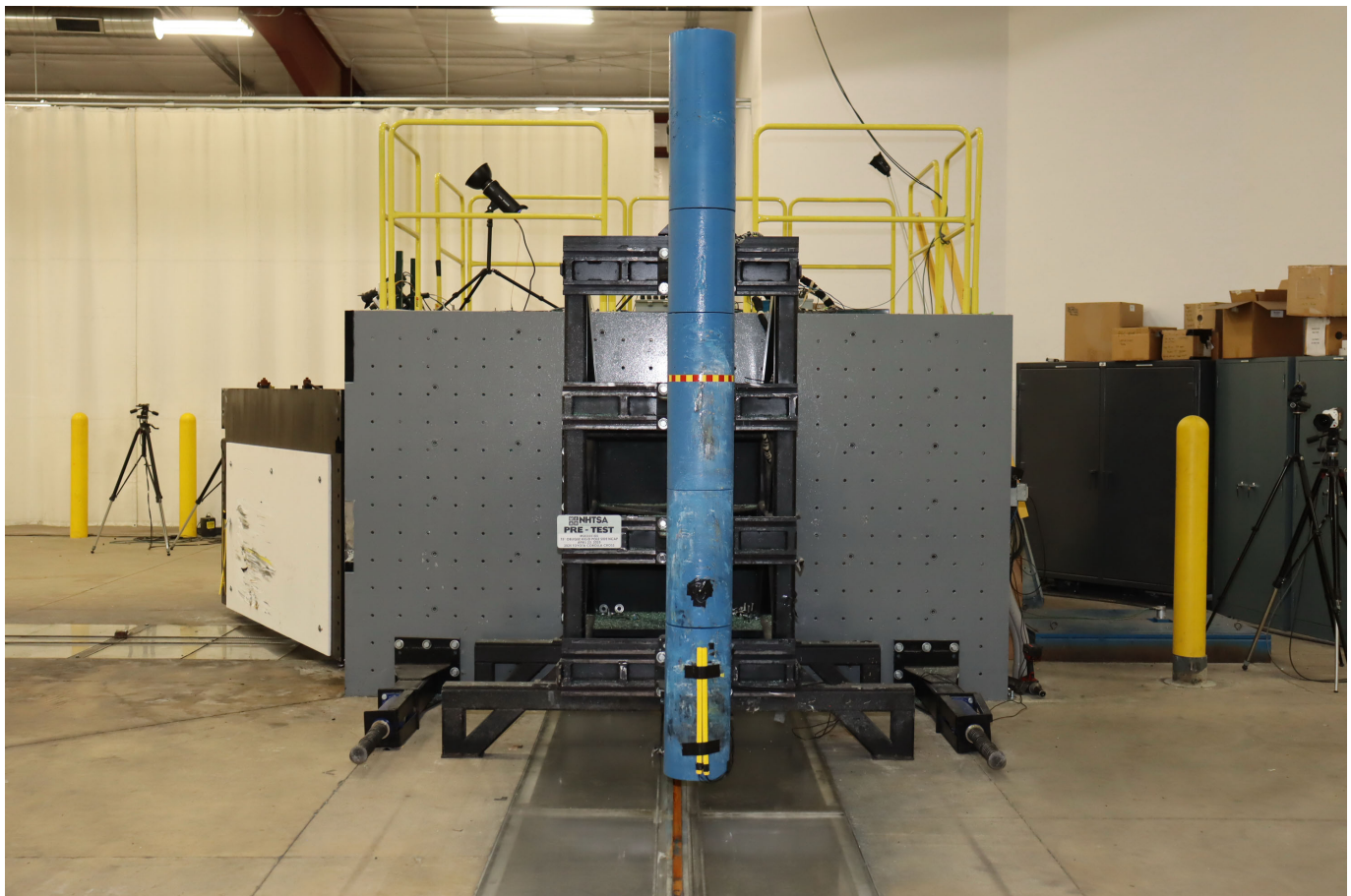


Photo No. 059 - Pre-Test Pole Barrier Front View

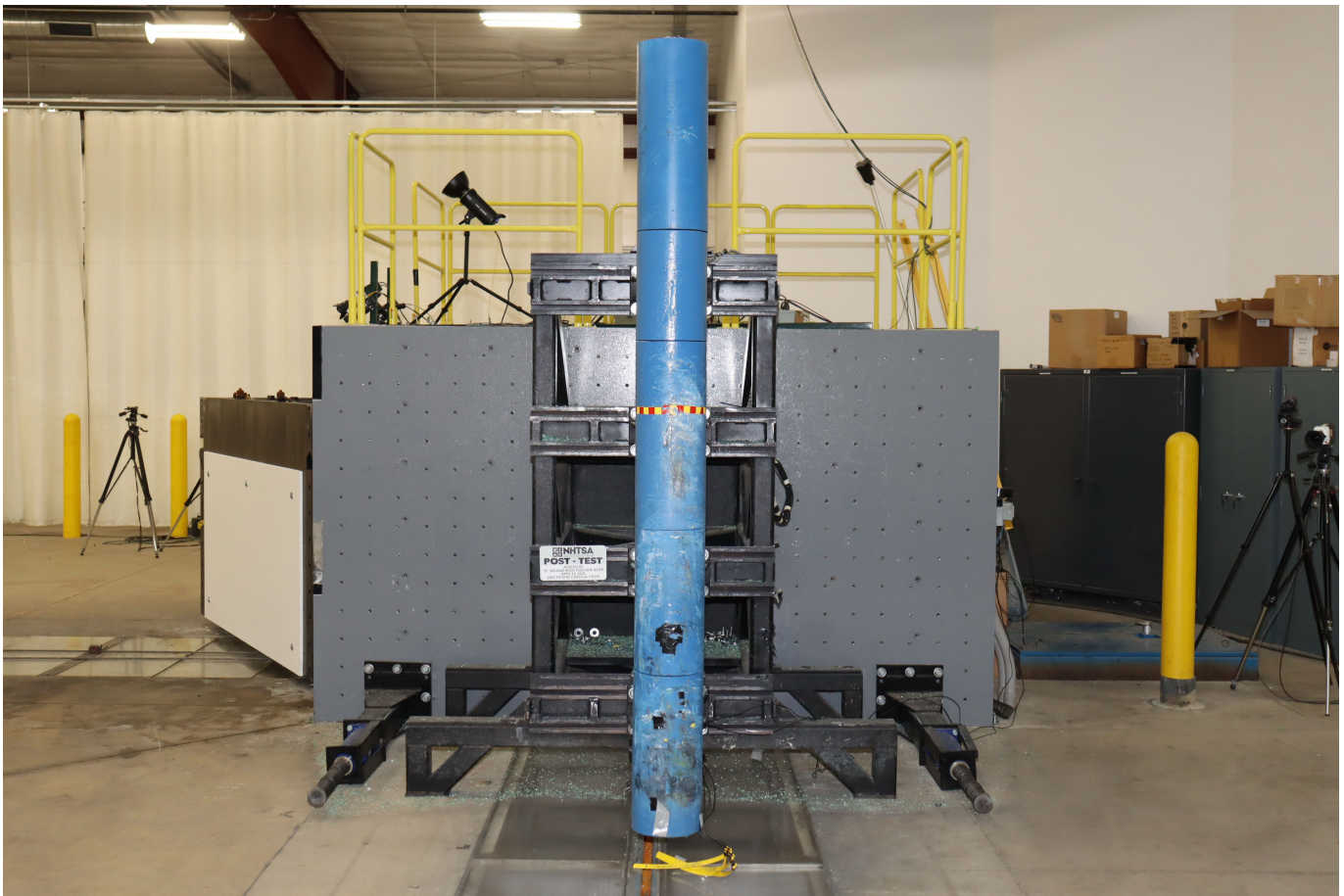


Photo No. 060 - Post-Test Pole Barrier Front View



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

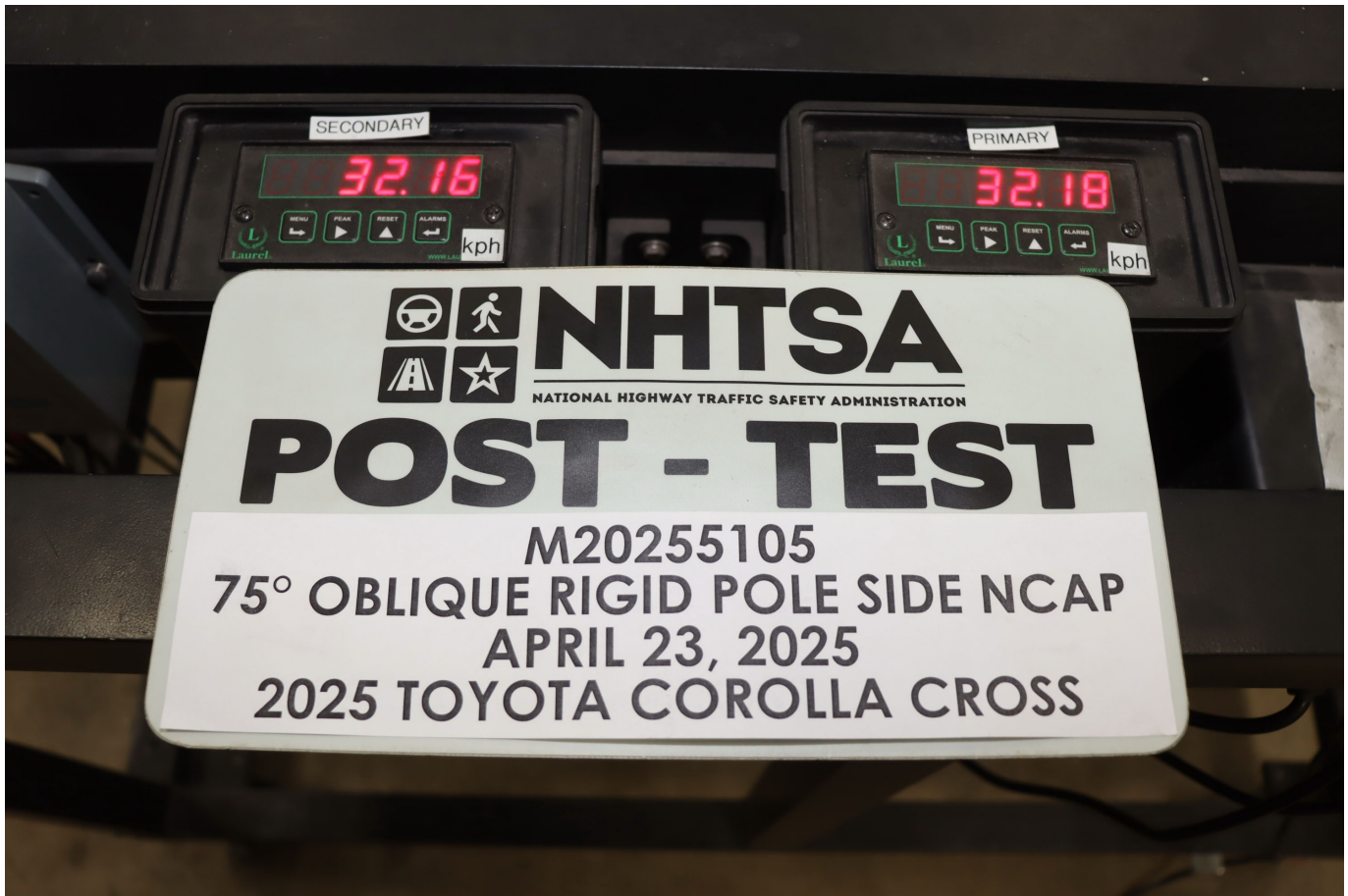


Photo No. 064 - Post-Test Primary and Redundant Speed Trap Read-Out



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

TOYOTA

DESC.: **Corolla Cross** L
VIN: **7MUAAAAG8SV125594**
YR/MDL: 2025/6301A
CLR: WIND CHILL PEARL/FA10 (0089/10)
FINAL ASSEMBLY POINT: HUNTSVILLE, ALABAMA, U.S.A.

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	★★★★★
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat Rear seat	Not Rated
Based on the risk of injury in a side impact.		
Rollover		Not Rated
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

STANDARD EQUIPMENT
UNLESS REPLACED BY OPTIONAL EQUIPMENT

MECHANICAL & PERFORMANCE

- 2.0L 4-cyl Engine
- w/ Dual Variable Valve Timing, CVT
- 17-in Steel Wheels

SAFETY & CONVENIENCE

- Toyota Safety Sense 3.0 w/Pre-Collision
- Star Safety System
- Connected Services Capable: 4G Network
- Dependent. See Toyota.com for details.

EXTERIOR

- LED Headlights w/ DRLs
- LED Stoplights
- Heated Outside Mirrors

INTERIOR

- 8-in Toyota Audio Multimedia w/ 6-Speakers, Wireless Apple CarPlay and Android Auto Compatibility
- SiriusXM w/3-Month Trial
- 2 USB Ports
- Fabric-Trimmed Seats
- 60/40 Split Fold-Down Rear Seat
- Rear-Seat Vents & Manual Single Zone Air Conditioning

For Full Product Details:

- Please Visit Toyota.com/CorollaCross
- ***Full Tank of Gas***

BASE MANUFACTURER'S SUGGESTED RETAIL PRICE **\$24,035.00**

OPTIONAL EQUIPMENT

FE	50 State Emissions	475.00
PC	Premium Paint	299.00
2T	All Weather Floor/Cargo Liners	155.00
MF	Mudguards	
DK	Owner's Portfolio	

Fuel Economy

32 MPG
combined city/hwy
3.1 gallons per 100 miles

Small SUVs range from 14 to 118 MPG. The best vehicle rates 140 MPG.

You save \$1,250 in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost
\$1,650

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

1 **6** **10** **1** **6** **10**
Best Best

This vehicle emits 276 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions. Learn more at fuel-economy.gov.

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 28 MPG and costs \$9,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPG is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuel-economy.gov
Calculate personalized estimates and compare vehicles

Smartphone QR Code

MANUFACTURER'S SUGGESTED RETAIL PRICE **\$24,964.00**

DELIVERY, PROCESSING AND HANDLING FEE **1,350.00**

TOTAL SUGGESTED RETAIL PRICE **\$26,314.00**

*Manufacturer's suggested retail price excludes delivery processing and handling fees, license and title fees, applicable federal, state and local taxes, and dealer and distributor options and accessories.

Delivered by Truck to: 21065
TOYOTA OF GRAND RAPIDS
2555 28TH STREET, S.E.
GRAND RAPIDS MI49512

TML1E1N150F0W0

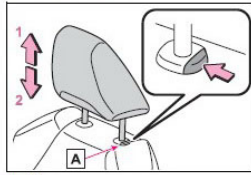
Photo No. 071 - Monroney Label

Head restraints

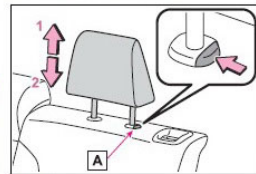
Head restraints are provided for all seats.

WARNING

- **Head restraint precautions**
Observe the following precautions regarding the head restraints. Failure to do so may result in death or serious injury.
- Use the head restraints designed for each respective seat.
 - Adjust the head restraints to the correct position at all times.
 - After adjusting the head restraints, push down on them and make sure they are locked in position.
 - Do not drive with the head restraints removed.

Adjusting a head restraint**Front seats**

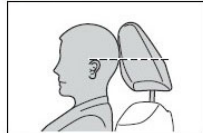
- 1 Up**
Pull the head restraints up.
- 2 Down**
Push the head restraint down while pressing the lock release button [A].

Rear outside seats

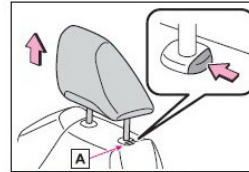
- 1 Up**
Pull the head restraints up.
- 2 Down**
Push the head restraint down while pressing the lock release button [A].

Adjusting the height of the head restraints (front seats)

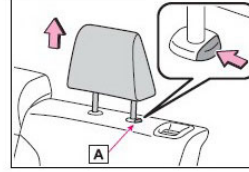
Make sure that the head restraints are adjusted so that the center of the head restraint is closest to the top of your ears.

**Removing the head restraints****Front seats**

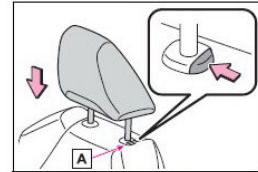
- Pull the head restraint up while pressing the lock release button [A].

**Rear outside seats**

- Pull the head restraint up while pressing the lock release button [A].

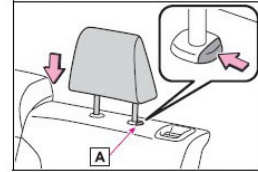
**Installing the head restraints****Front seats**

- Align the head restraint with the installation holes and push it down to the lock position.
- Press and hold the lock release button [A] when lowering the head restraint.

**Rear outside seats**

- Align the head restraint with the installation holes and push it down to the lock position.

Press and hold the lock release button [A] when lowering the head restraint.



3
Before driving

Photo No. 072 - Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



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

APPENDIX B
DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

		<u>Page No.</u>
Figure No. 1.	Driver Head CG Acceleration (X) vs. Time	B-1
Figure No. 2.	Driver Head CG Acceleration (Y) vs. Time	B-1
Figure No. 3.	Driver Head CG Acceleration (Z) vs. Time	B-1
Figure No. 4.	Driver Head CG Resultant Acceleration (X) vs. Time	B-1
Figure No. 5.	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
Figure No. 6.	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
Figure No. 7.	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
Figure No. 8.	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
Figure No. 9.	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
Figure No. 10.	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
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)

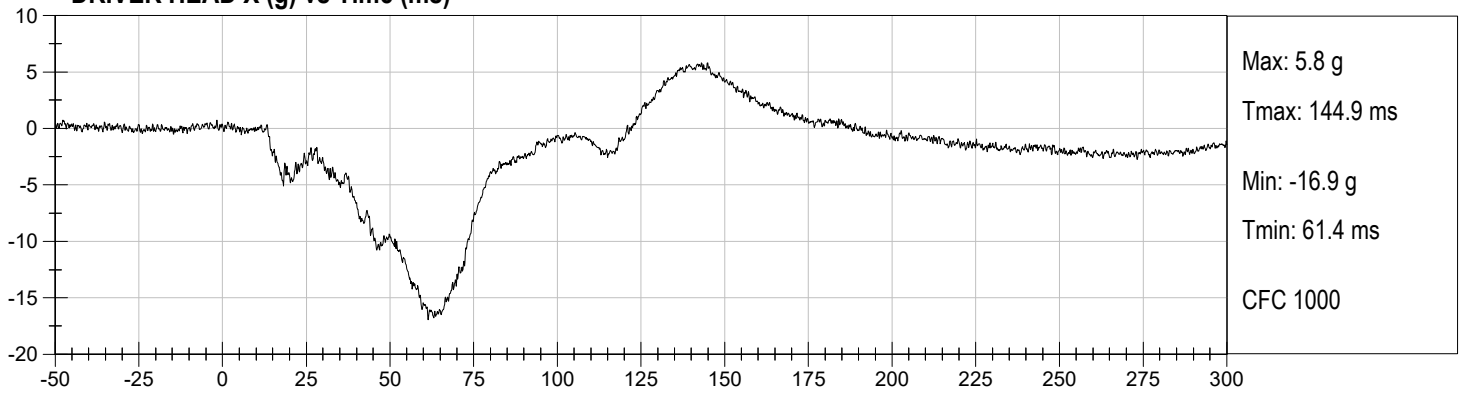
Load Cell Pole Barrier #5 Force (Y)

Load Cell Pole Barrier #6 Force (Y)

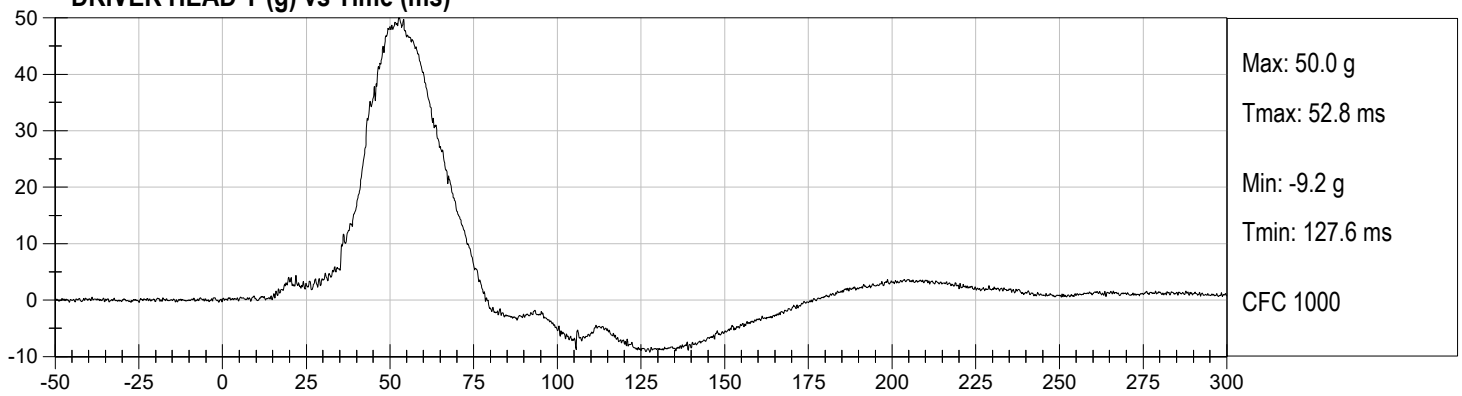
Load Cell Pole Barrier #7 Force (Y)

Load Cell Pole Barrier #8 Force (Y)

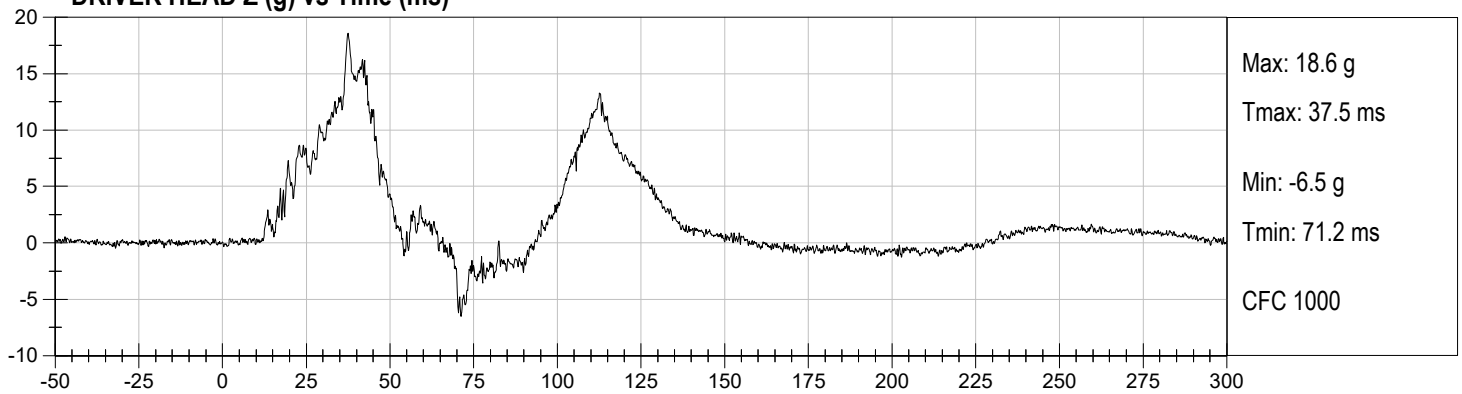
DRIVER HEAD X (g) vs Time (ms)



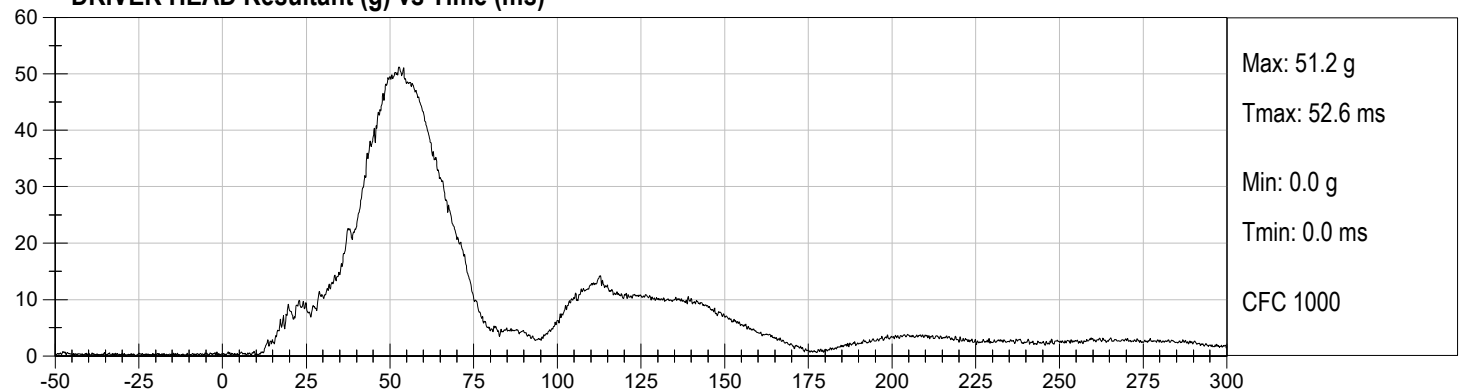
DRIVER HEAD Y (g) vs Time (ms)



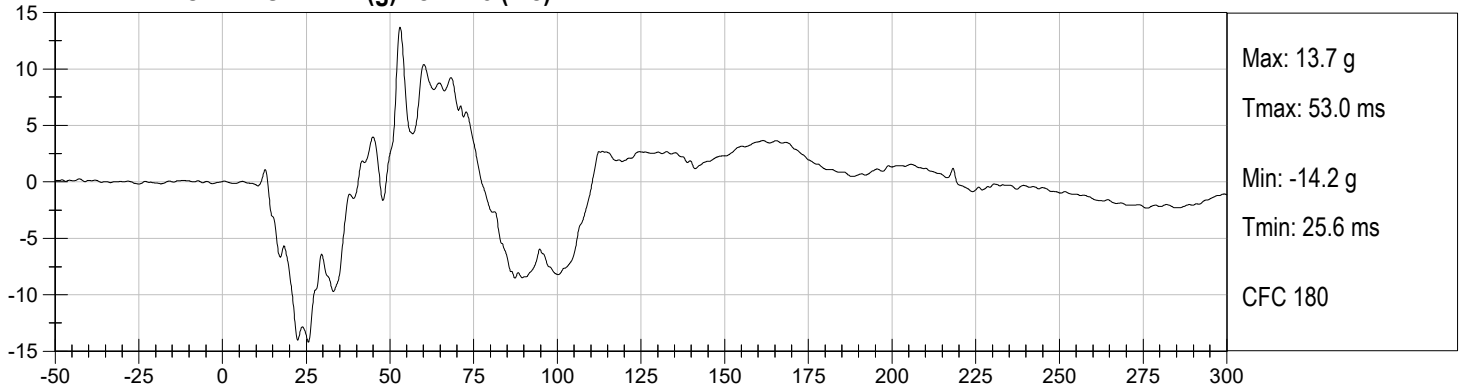
DRIVER HEAD Z (g) vs Time (ms)



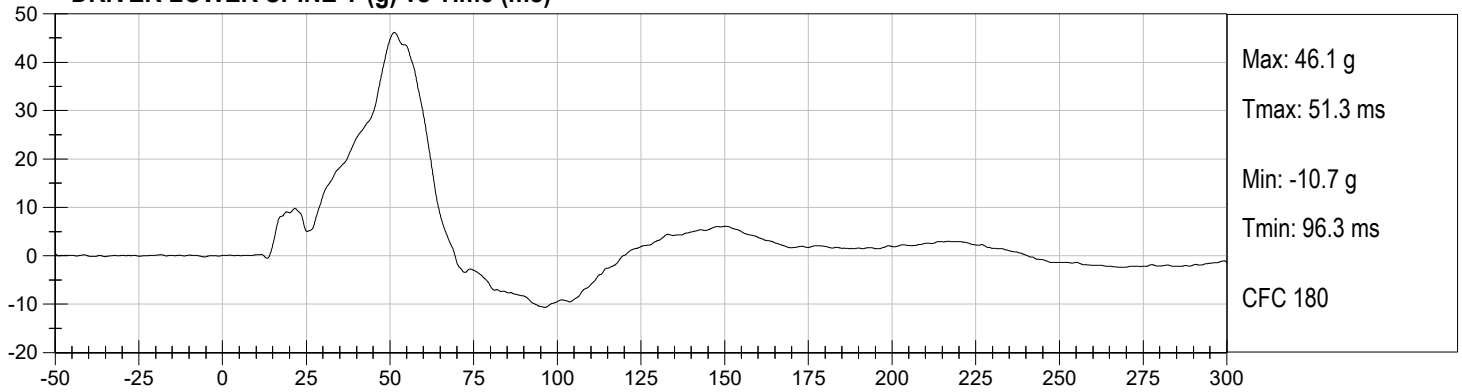
DRIVER HEAD Resultant (g) vs Time (ms)



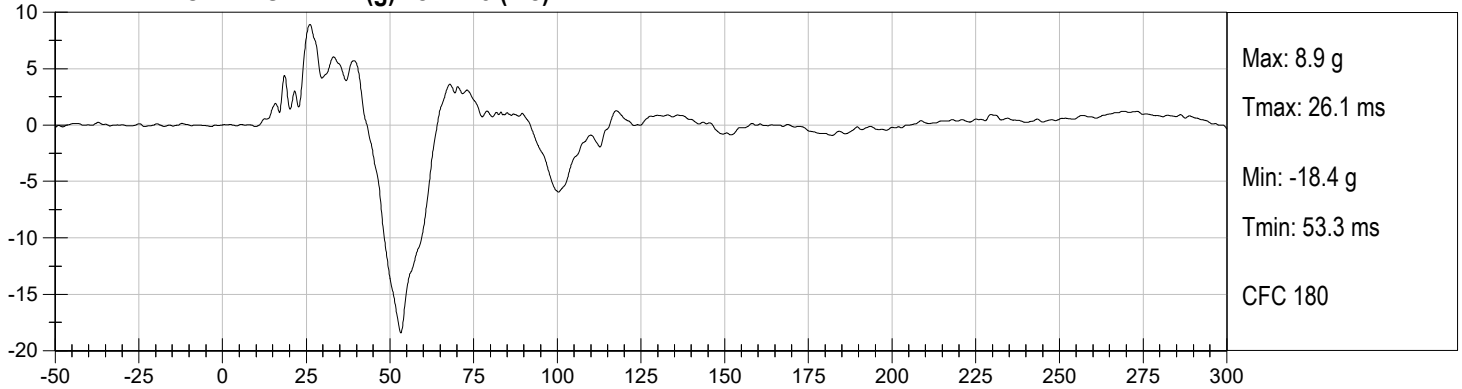
DRIVER LOWER SPINE X (g) vs Time (ms)



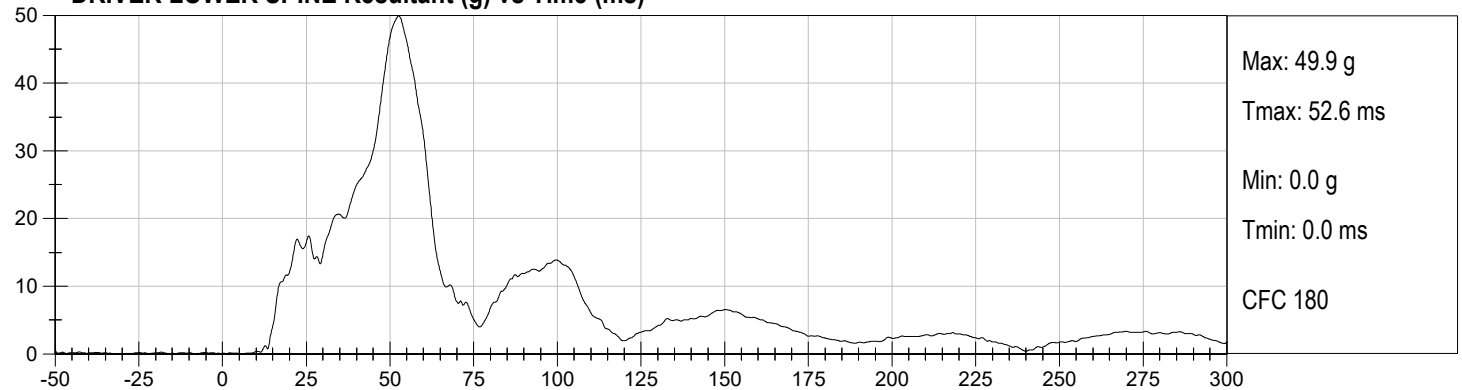
DRIVER LOWER SPINE Y (g) vs Time (ms)



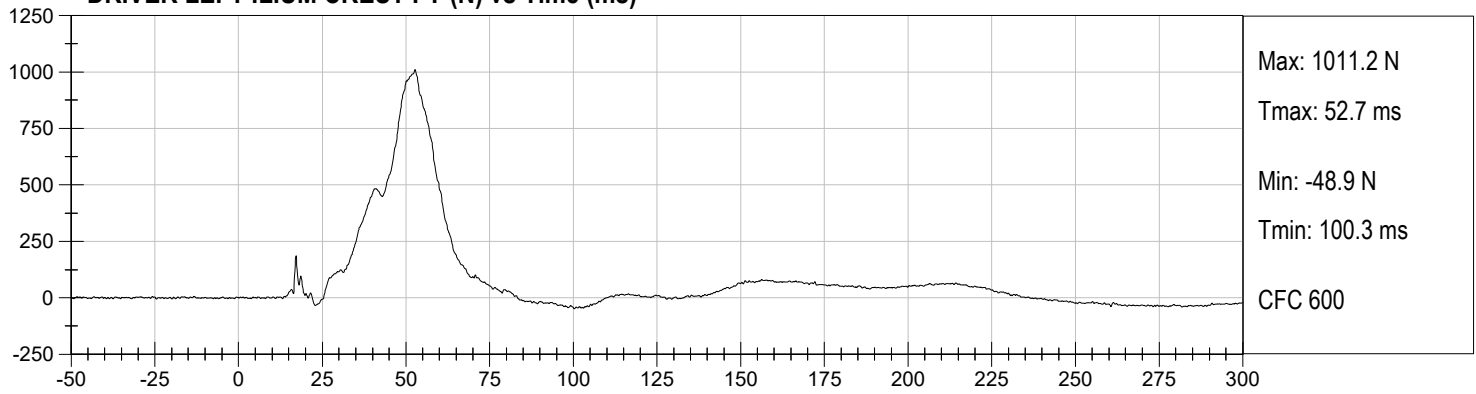
DRIVER LOWER SPINE Z (g) vs Time (ms)



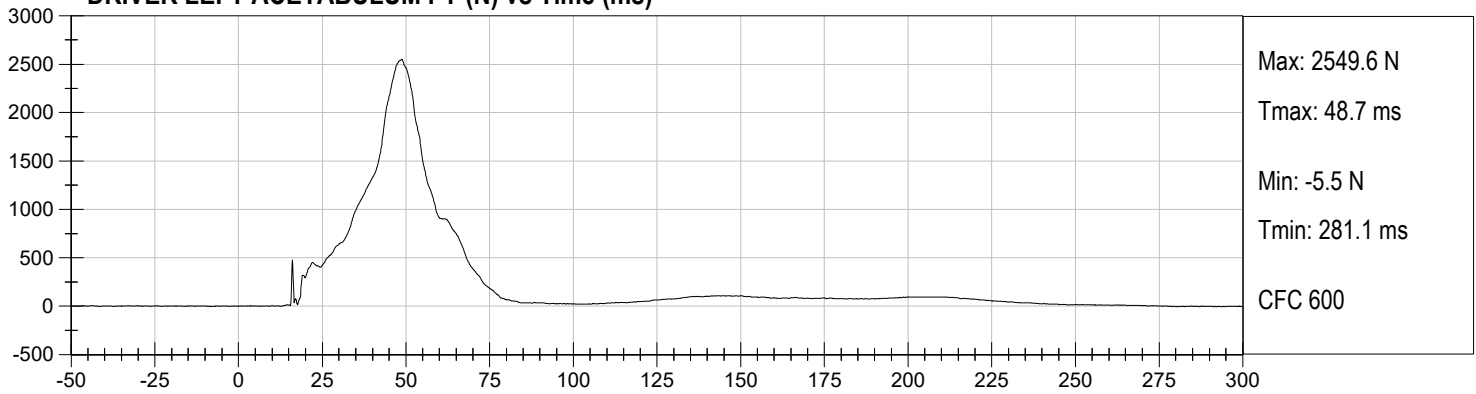
DRIVER LOWER SPINE Resultant (g) vs Time (ms)



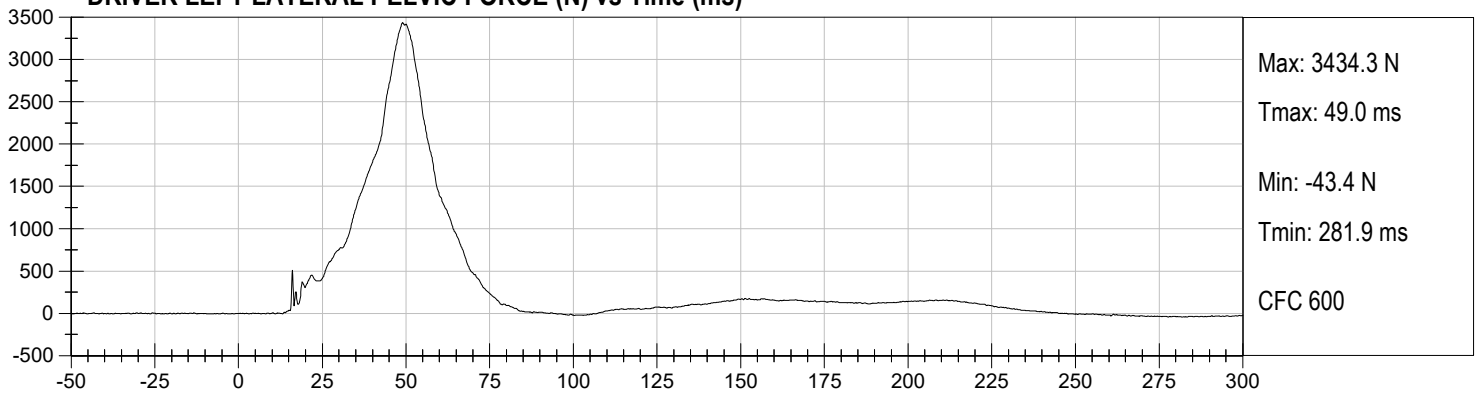
DRIVER LEFT ILIUM CREST FY (N) vs Time (ms)



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

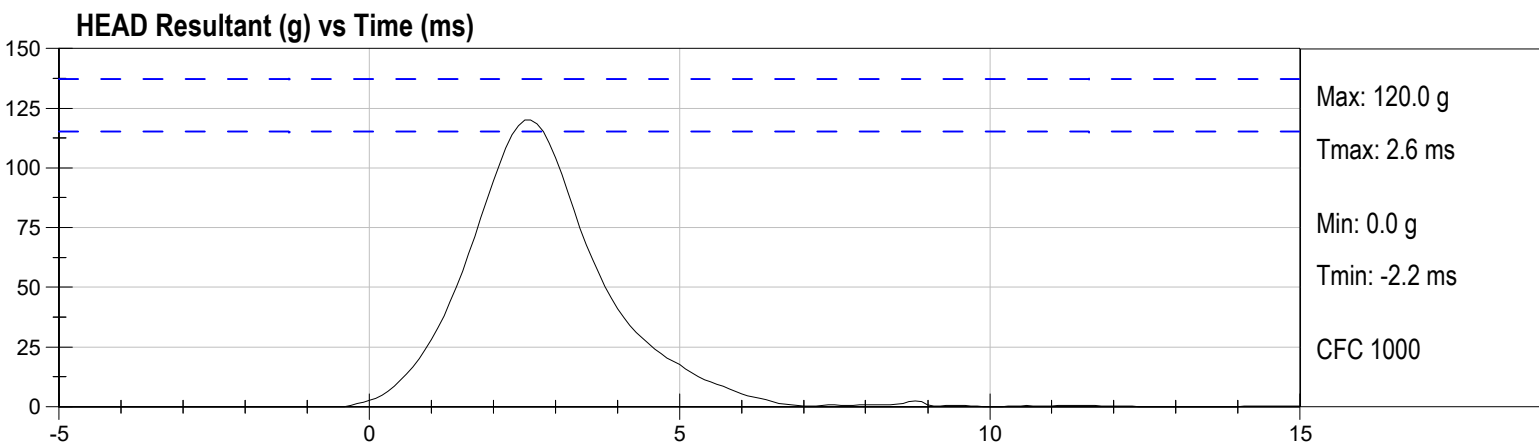
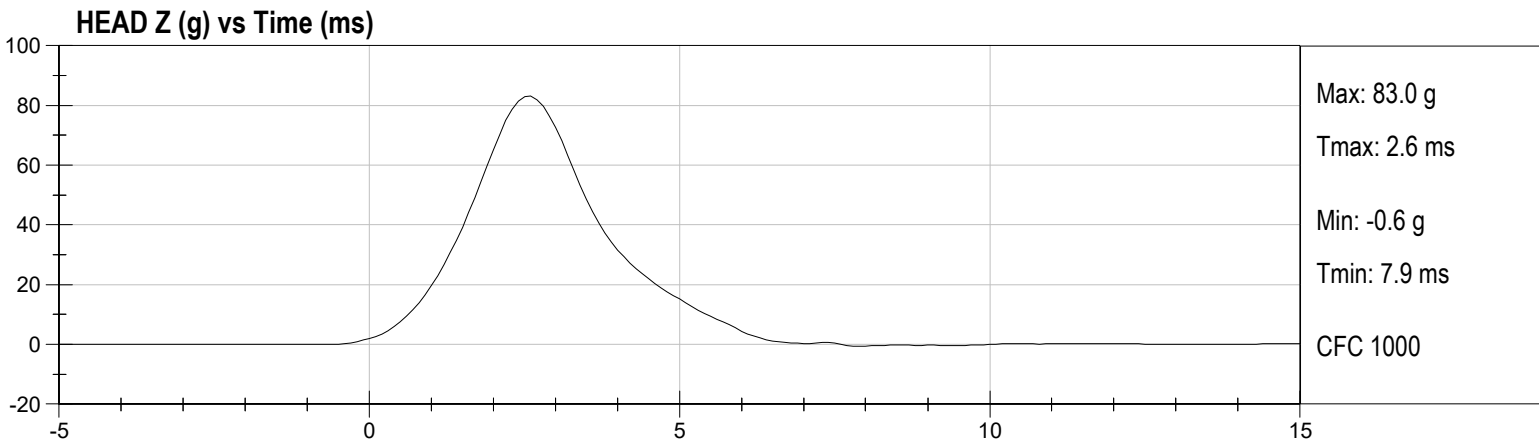
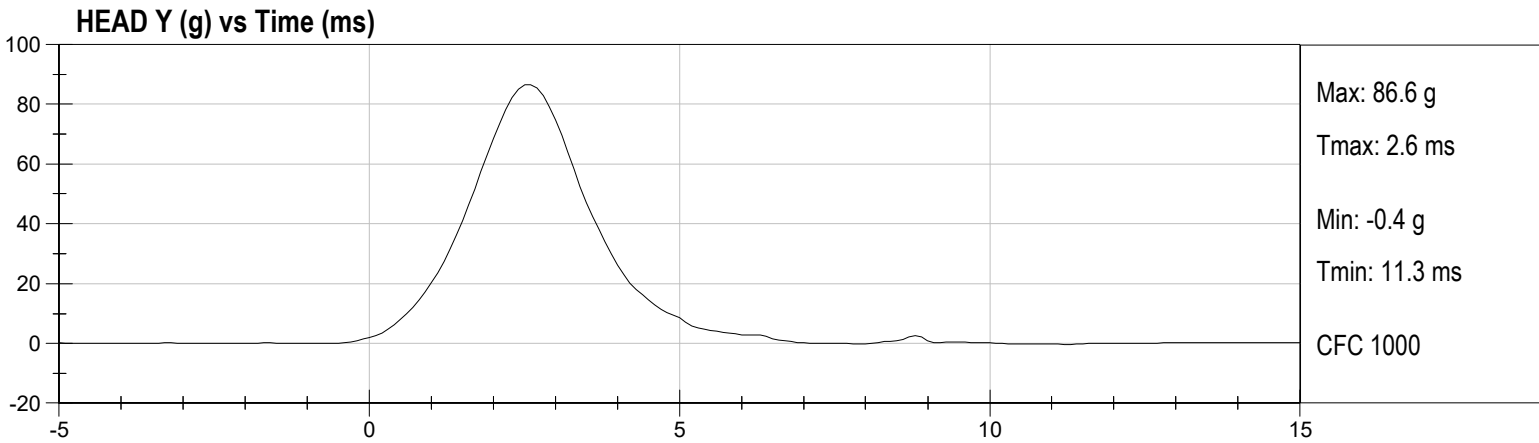
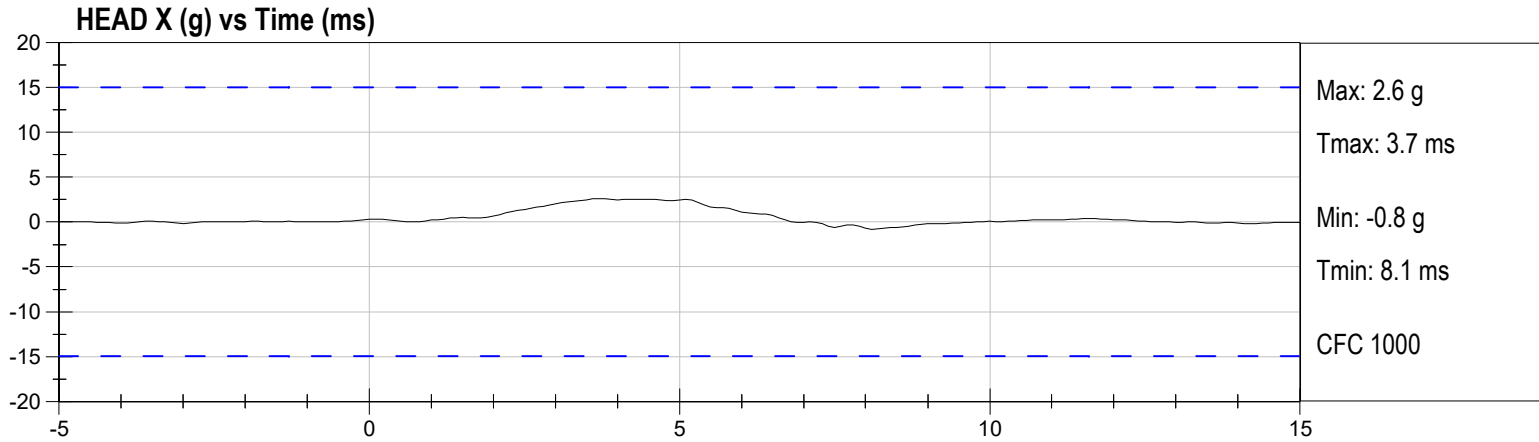
SID-IIsD External Measurements
SN: 296

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



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Peak Resultant Acceleration	g	115 to 137	120	Pass
Peak Longitudinal Acceleration	g	-15.0 to 15.0	2.6	Pass
Unimodal	%	within 15% of peak	2	Pass

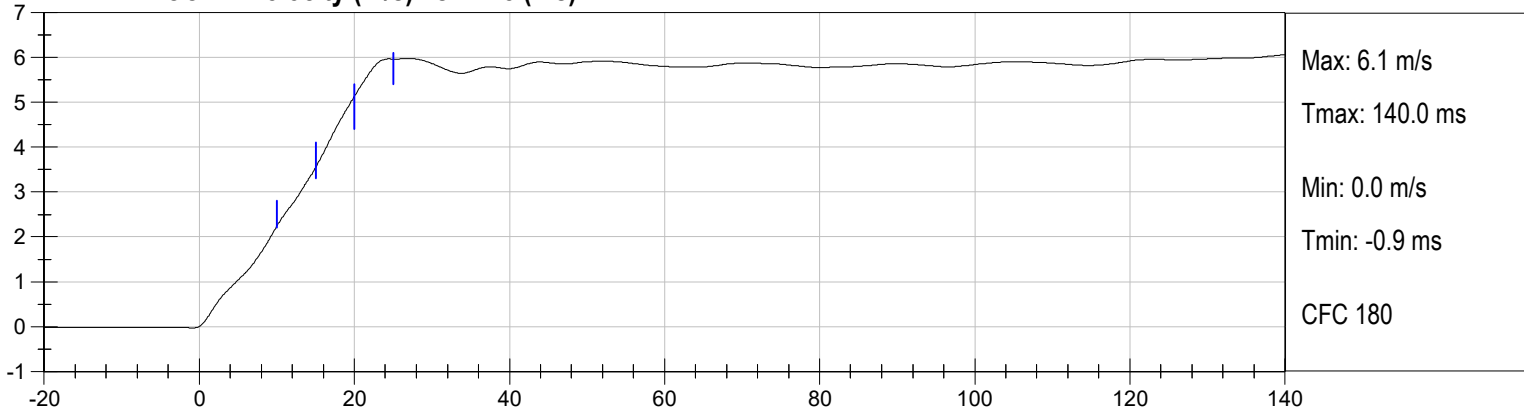
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
HEAD Y	Endevco	T30974	11/25/2024	5/27/2025
HEAD X	Endevco	T30975	11/25/2024	5/27/2025
HEAD Z	Endevco	T30976	11/25/2024	5/27/2025



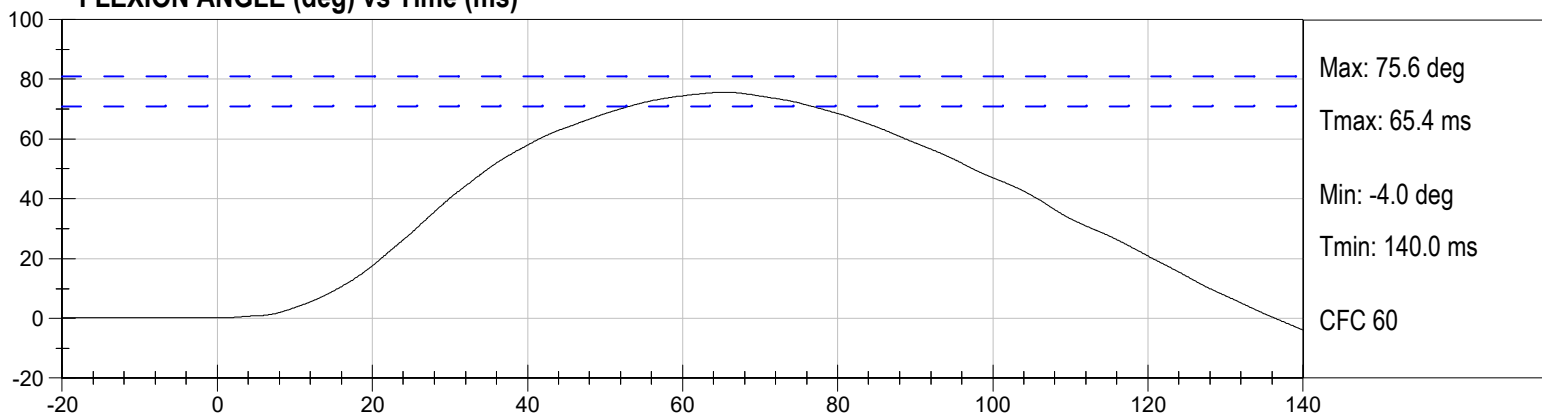
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Impact Velocity	m/s	5.51 to 5.63	5.58	Pass
Pendulum Velocity at 10 ms	m/s	2.2 to 2.8	2.21	Pass
Pendulum Velocity at 15 ms	m/s	3.30 to 4.10	3.51	Pass
Pendulum Velocity at 20 ms	m/s	4.40 to 5.40	5.11	Pass
Pendulum Velocity at 25 ms	m/s	5.40 to 6.10	5.97	Pass
Peak Pendulum Velocity from 25 to 100 ms	m/s	5.50 to 6.20	5.98	Pass
Maximum "D" Plane Rotation	deg	71 to 81	76	Pass
Time of Maximum "D" Plane Rotation	ms	50 to 70	65	Pass
Maximum Moment About Occipital Condyle	Nm	-44 to -36	-38	Pass
Time of Moment Decay Time To 0 Nm	ms	102 to 126	120	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PEND. ACCEL.	Endevco	AH5P1	01/13/2025	7/15/2025
NECK FORCE Y	Denton	N252FY	02/05/2025	8/7/2025
NECK MOMENT X	Denton	N252MX	02/05/2025	8/7/2025
POT. A - FRONT	Servo	2732	01/09/2025	7/11/2025
POT. C - HEADFORM	Servo	2204	01/09/2025	7/11/2025

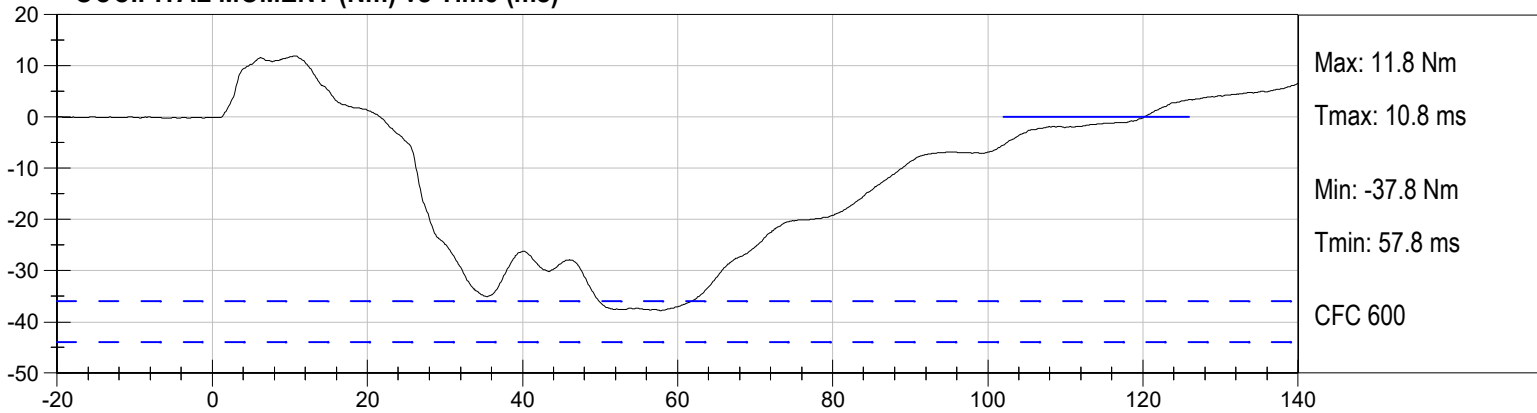
PEND. ACCEL. Velocity (m/s) vs Time (ms)



FLEXION ANGLE (deg) vs Time (ms)

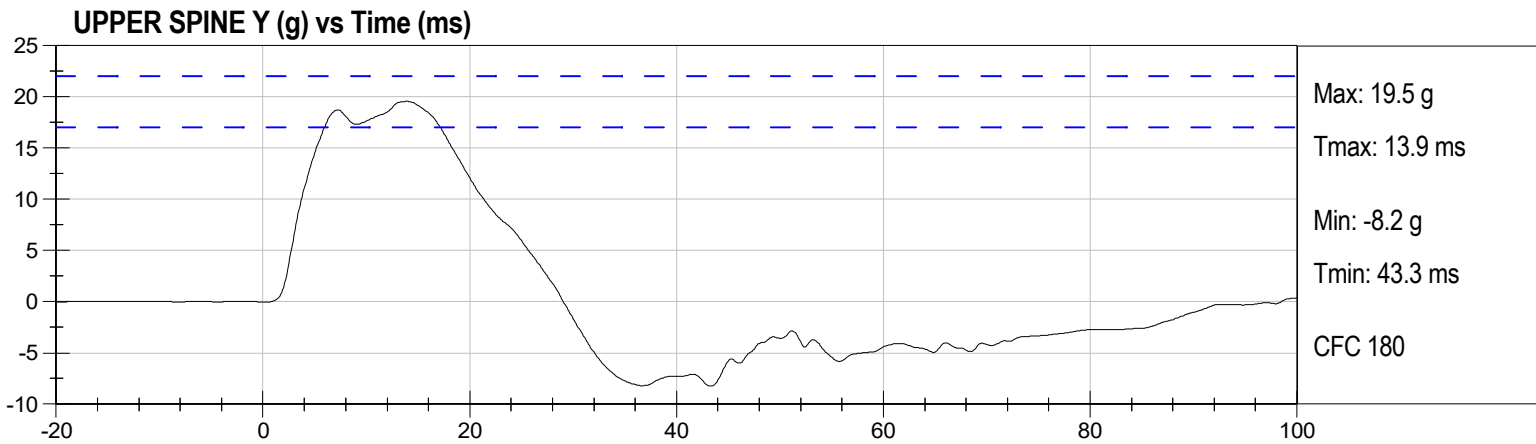
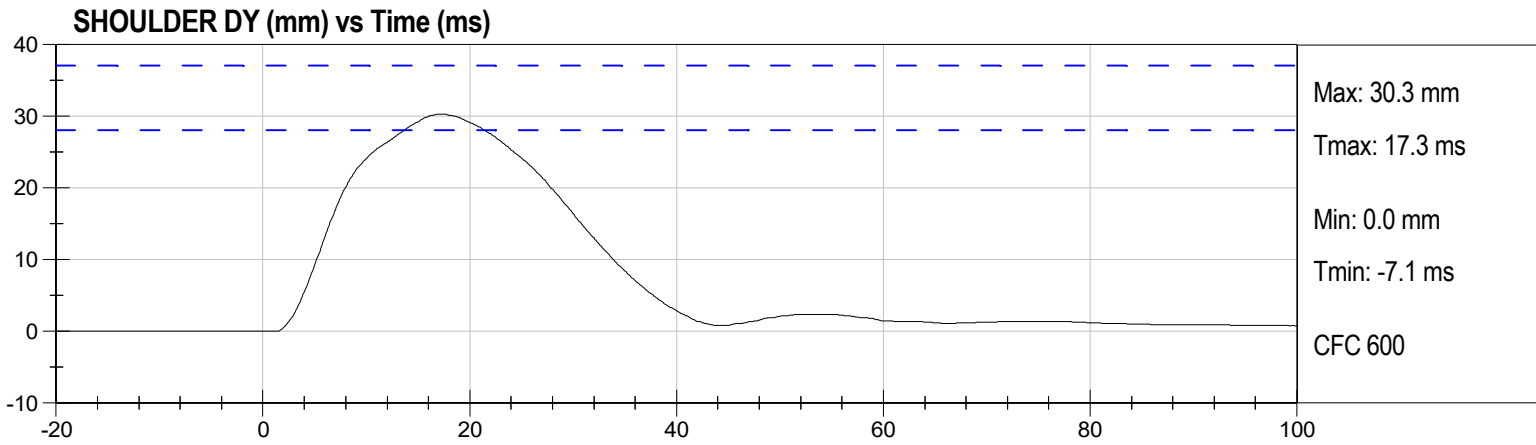
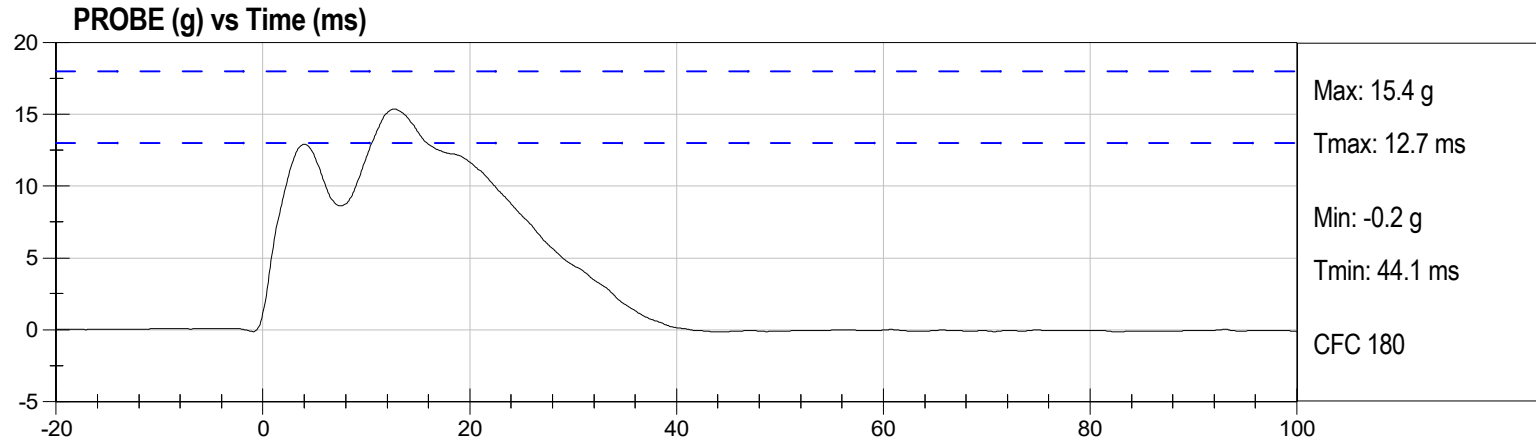


OCCIPITAL MOMENT (Nm) vs Time (ms)



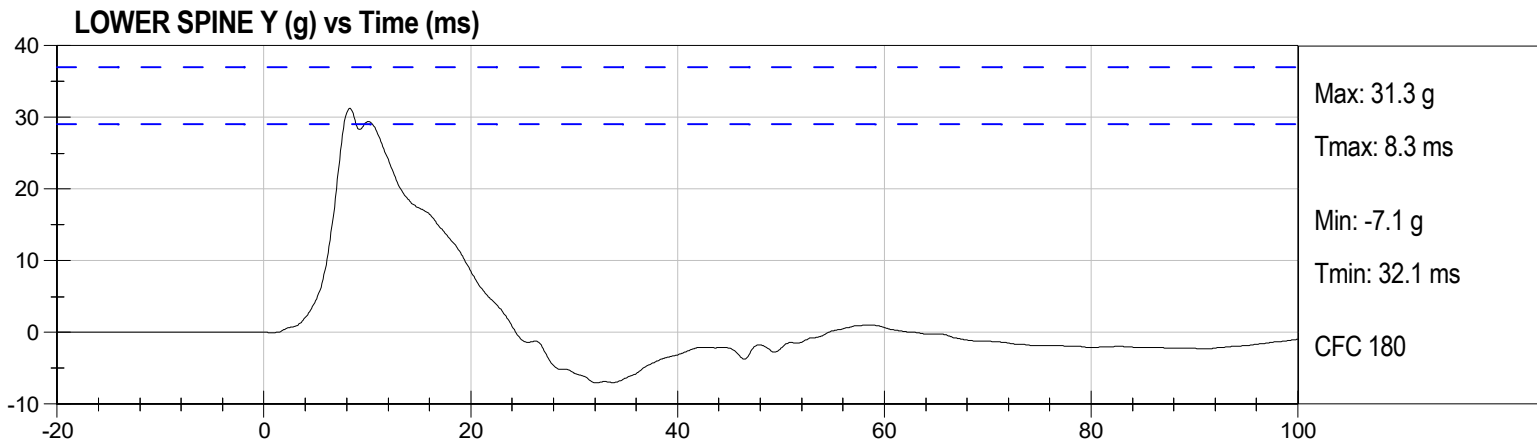
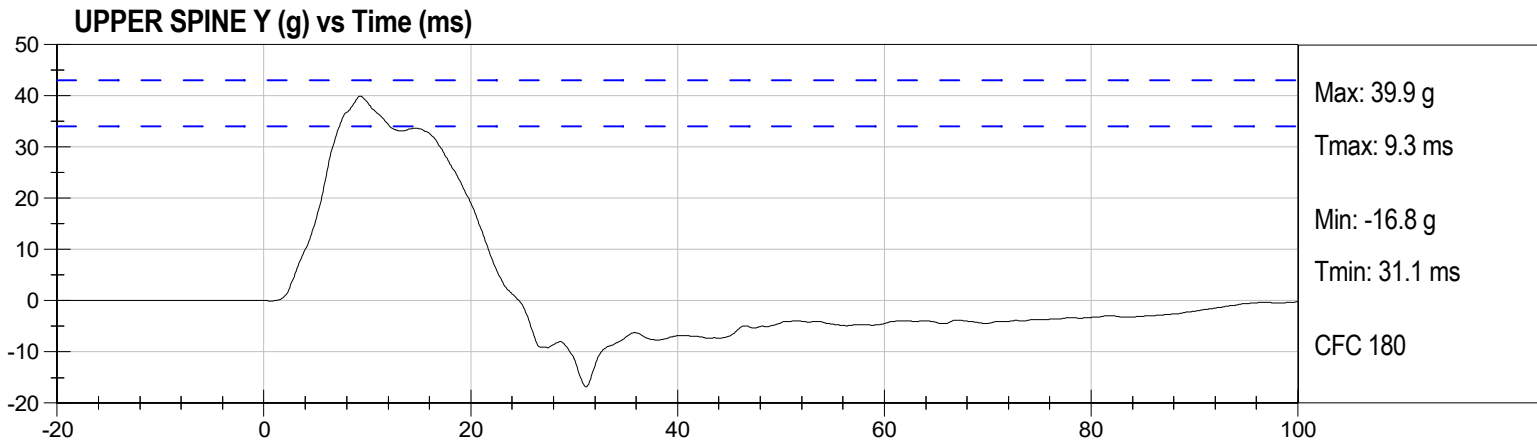
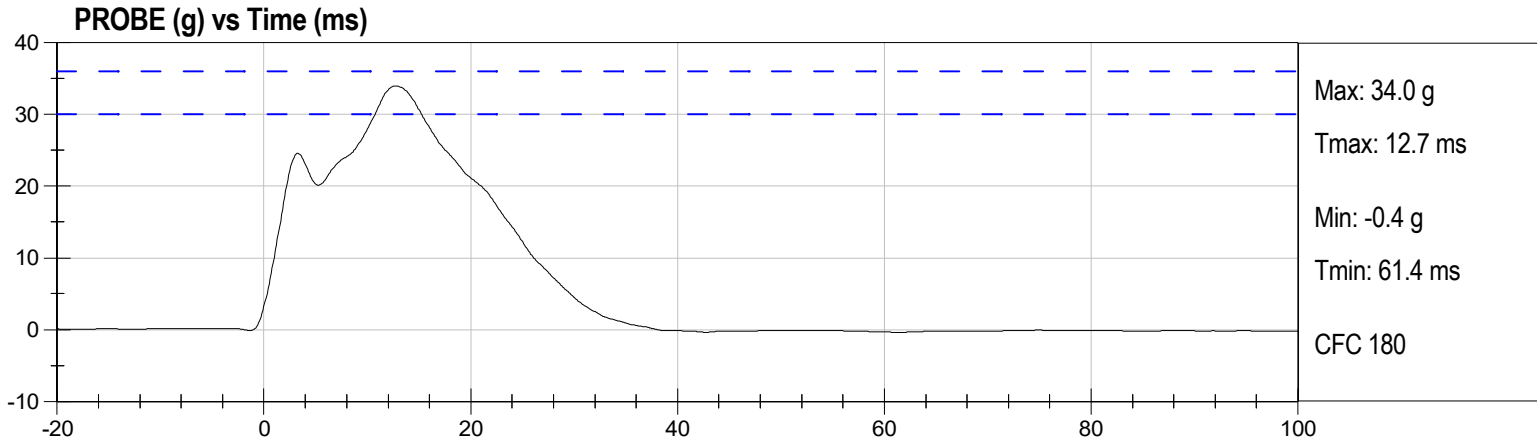
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Impact Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Probe Acceleration	g	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	g	17 to 22	20	Pass

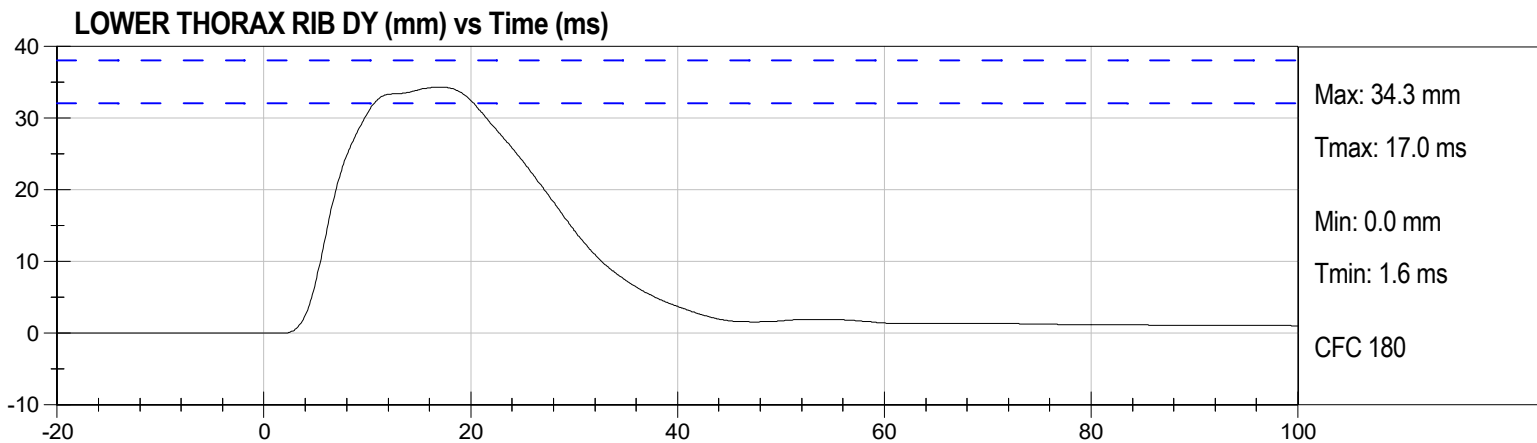
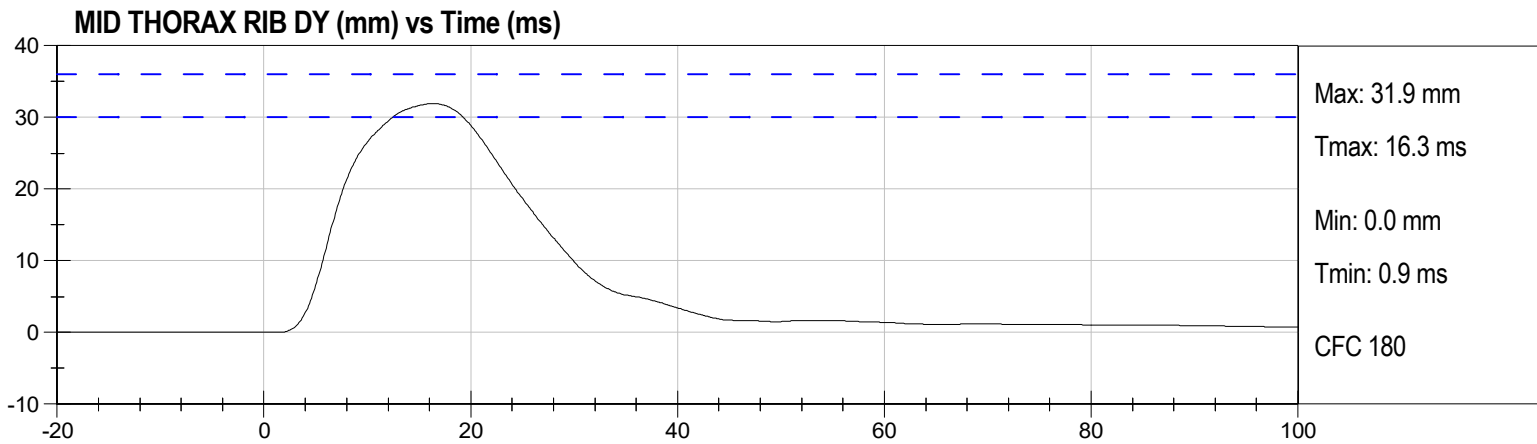
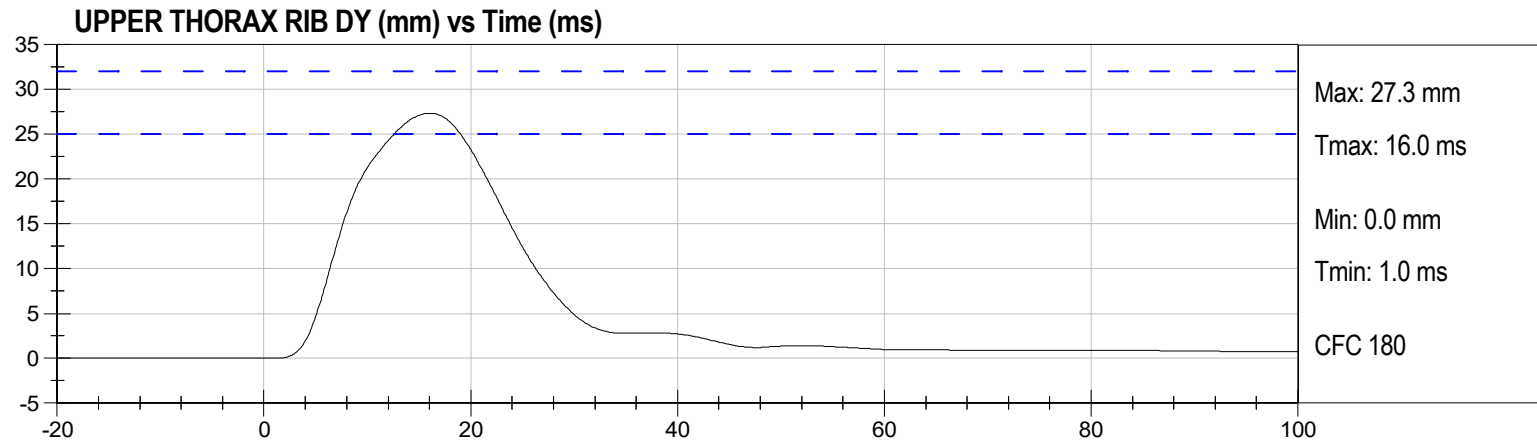
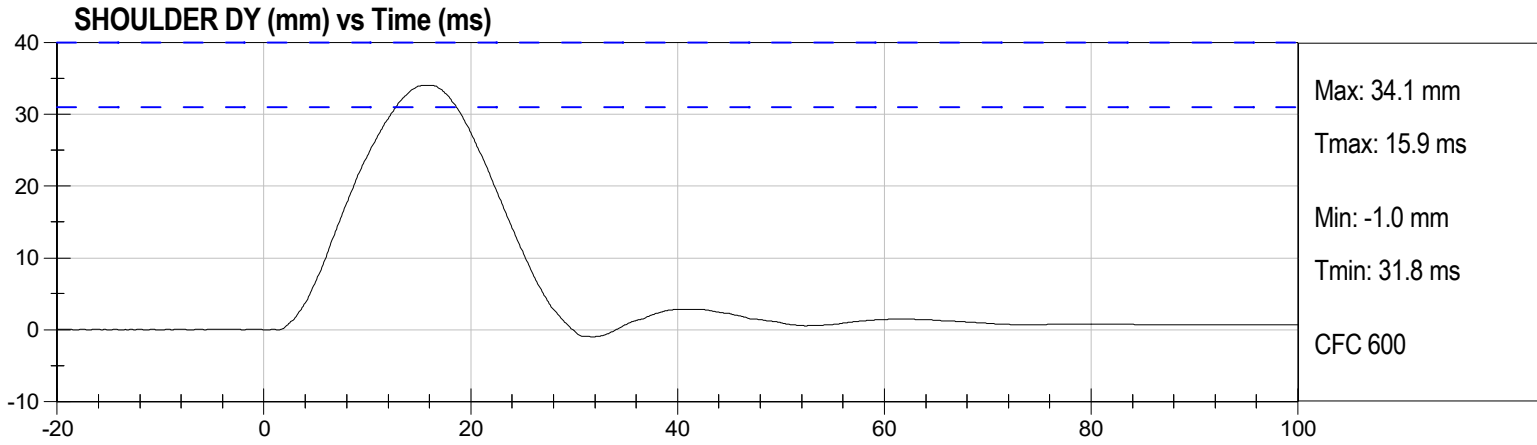
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	09/18/2024	3/20/2025
UPPER SPINE Y	Endevco	P88675	12/12/2024	6/13/2025
SHOULDER DY	FTSS	G1223	12/12/2024	6/13/2025



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration after 5 ms	g	30 to 36	34	Pass
Upper Spine (T1) Y Acceleration	g	34 to 43	40	Pass
Lower Spine (T12) Y Acceleration	g	29 to 37	31	Pass
Shoulder Displacement	mm	31 to 40	34	Pass
Upper Thorax Rib Displacement	mm	25 to 32	27	Pass
Middle Thorax Rib Displacement	mm	30 to 36	32	Pass
Lower Thorax Rib Displacement	mm	32 to 38	34	Pass

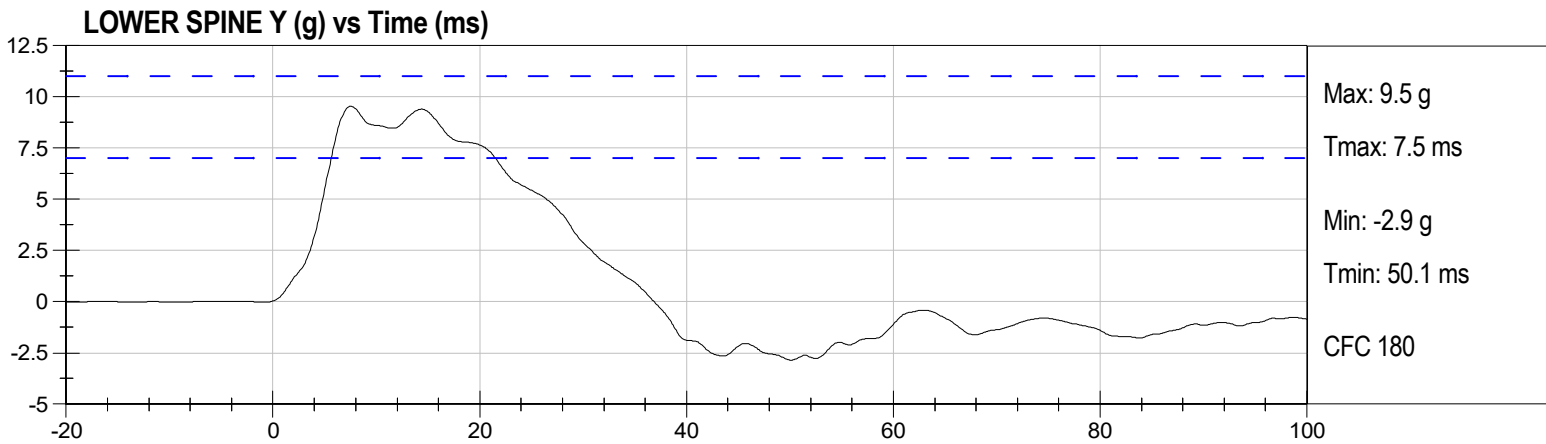
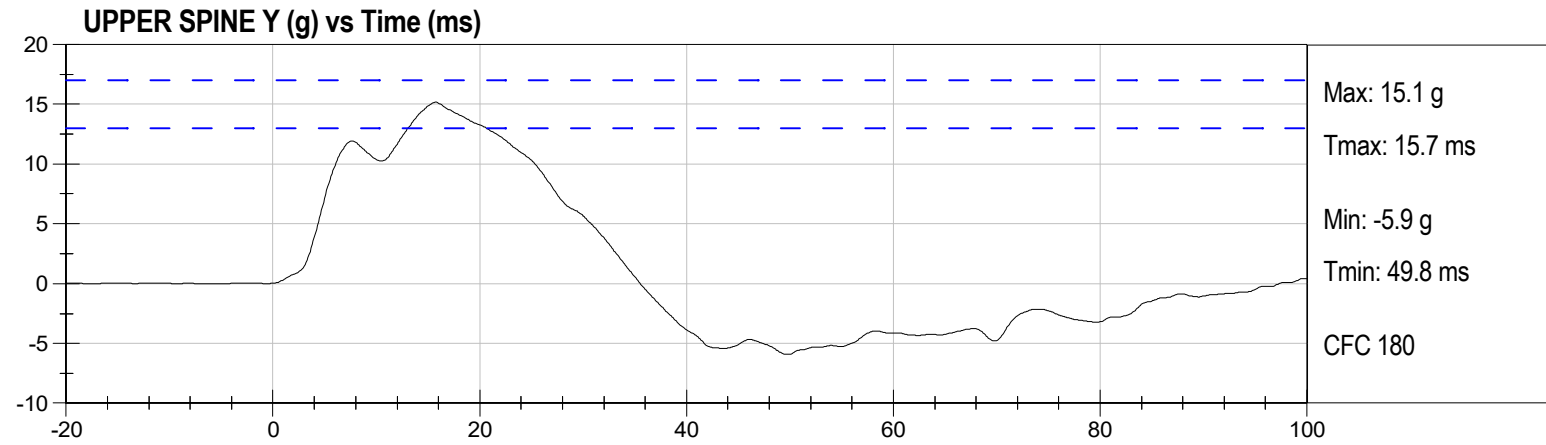
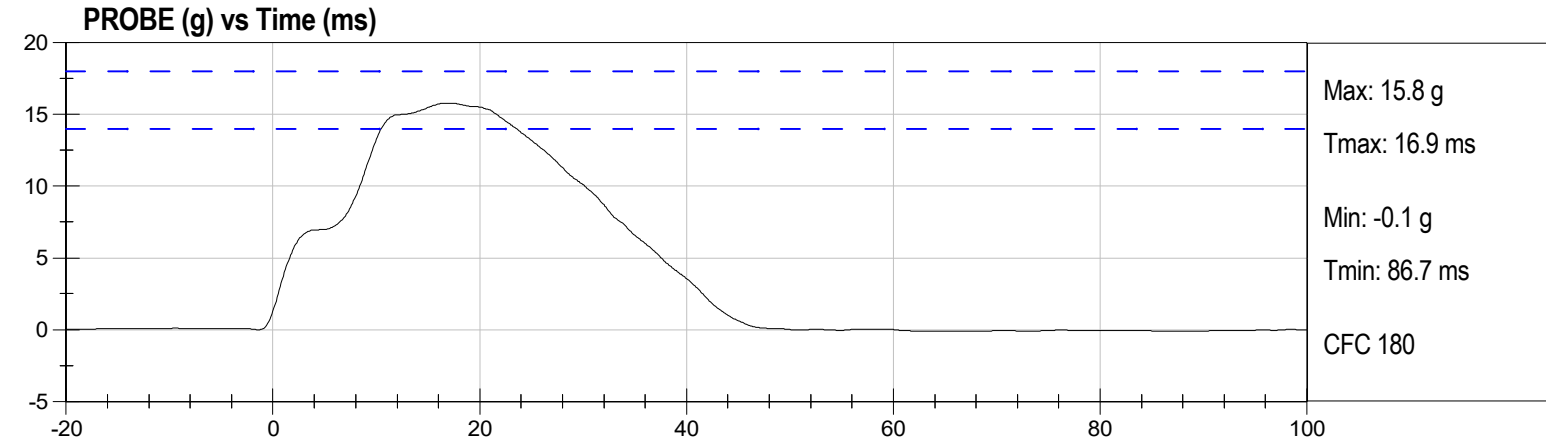
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	09/18/2024	3/20/2025
UPPER SPINE Y	Endevco	P88675	12/12/2024	6/13/2025
LOWER SPINE Y	Endevco	P79439	12/12/2024	6/13/2025
SHOULDER DY	FTSS	G1223	12/12/2024	6/13/2025
UPPER THORAX RIB DY	Servo	G012	12/12/2024	6/13/2025
MID THORAX RIB DY	FTSS	G1163	12/12/2024	6/13/2025
LOWER THORAX RIB DY	FTSS	G1158	12/12/2024	6/13/2025



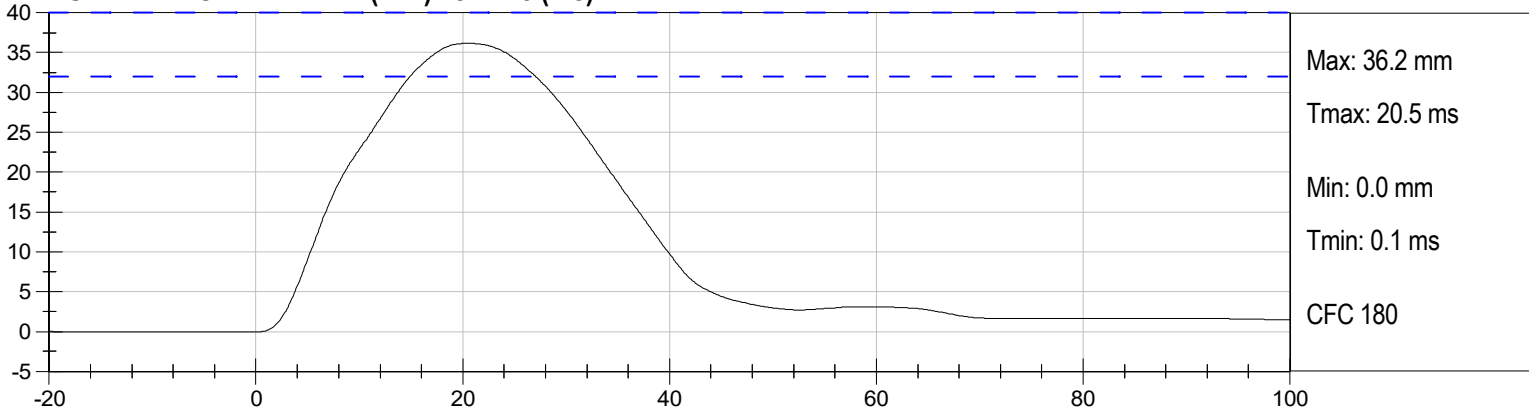


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Impact Velocity	m/s	4.2 to 4.4	4.27	Pass
Peak Probe Acceleration	g	14 to 18	16	Pass
Upper Spine (T1) Y Acceleration	g	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	g	7 to 11	10	Pass
Upper Thorax Rib Displacement	mm	32 to 40	36	Pass
Middle Thorax Rib Displacement	mm	39 to 45	42	Pass
Lower Thorax Rib Displacement	mm	35 to 43	40	Pass

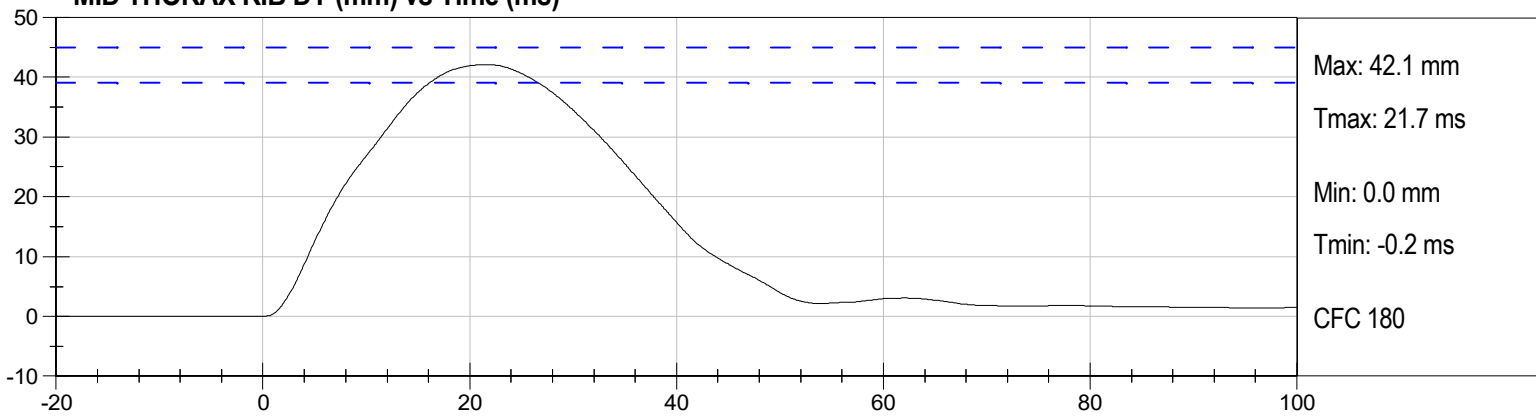
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	09/18/2024	3/20/2025
UPPER SPINE Y	Endevco	P88675	12/12/2024	6/13/2025
LOWER SPINE Y	Endevco	P79439	12/12/2024	6/13/2025
UPPER THORAX RIB DY	Servo	G012	12/12/2024	6/13/2025
MID THORAX RIB DY	FTSS	G1163	12/12/2024	6/13/2025
LOWER THORAX RIB DY	FTSS	G1158	12/12/2024	6/13/2025



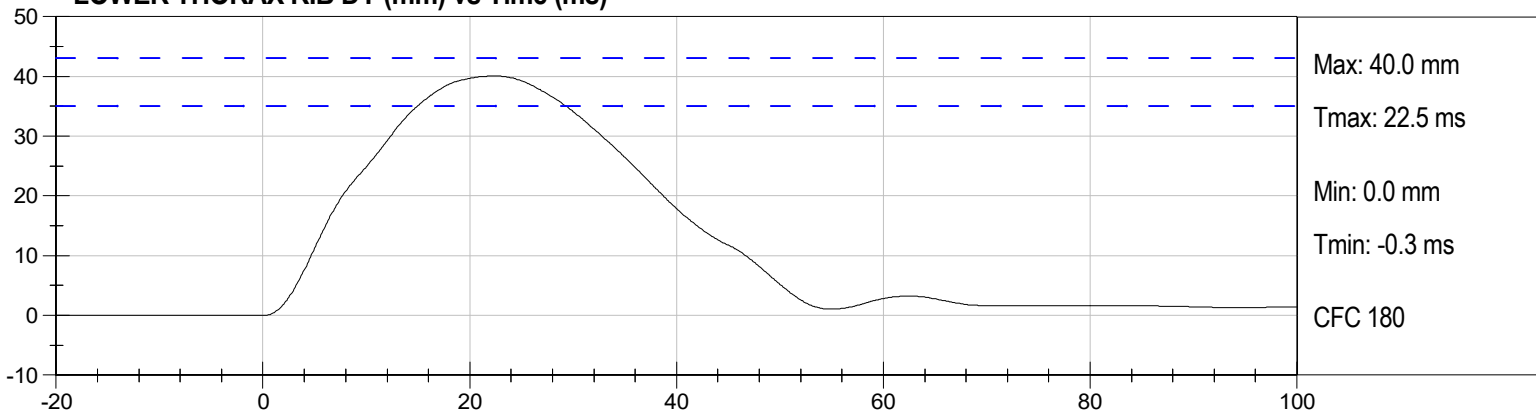
UPPER THORAX RIB DY (mm) vs Time (ms)



MID THORAX RIB DY (mm) vs Time (ms)



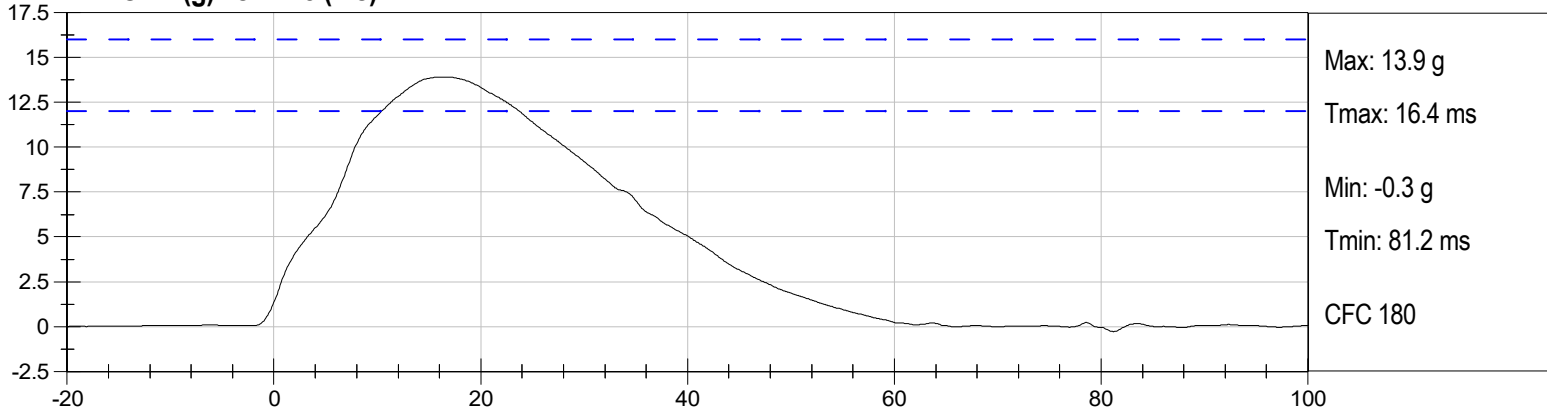
LOWER THORAX RIB DY (mm) vs Time (ms)



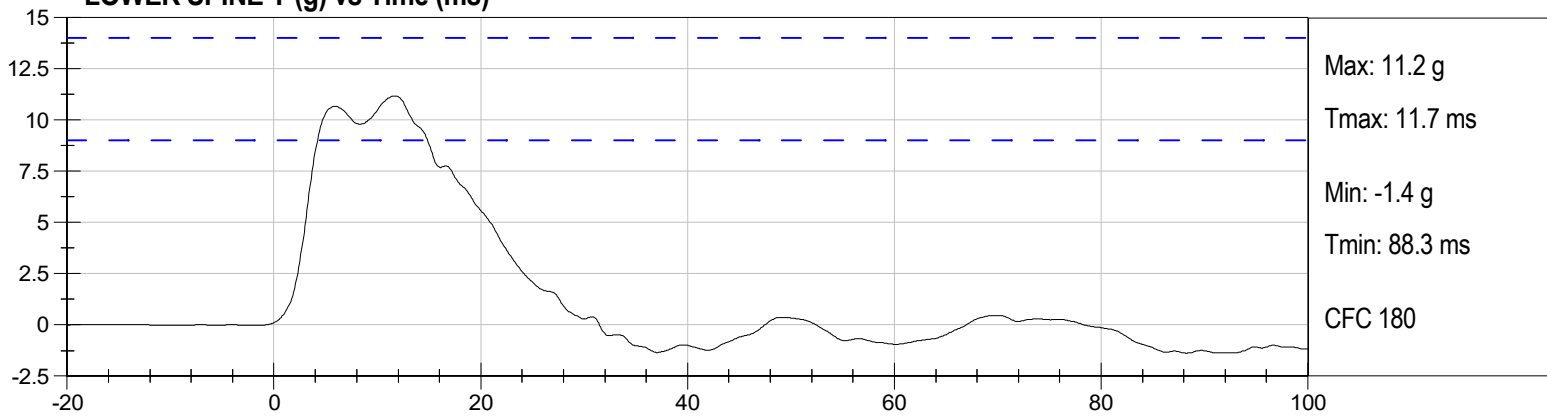
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Impact Velocity	m/s	4.2 to 4.4	4.30	Pass
Peak Probe Acceleration	g	12 to 16	14	Pass
Lower Spine (T12) Y Acceleration	g	9 to 14	11	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	41	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	38	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	09/18/2024	3/20/2025
LOWER SPINE Y	Endevco	P79439	12/12/2024	6/13/2025
UPPER ABDOMINAL RIB DY	FTSS	G1146	12/12/2024	6/13/2025
LOWER ABDOMINAL RIB DY	FTSS	G1126	12/12/2024	6/13/2025

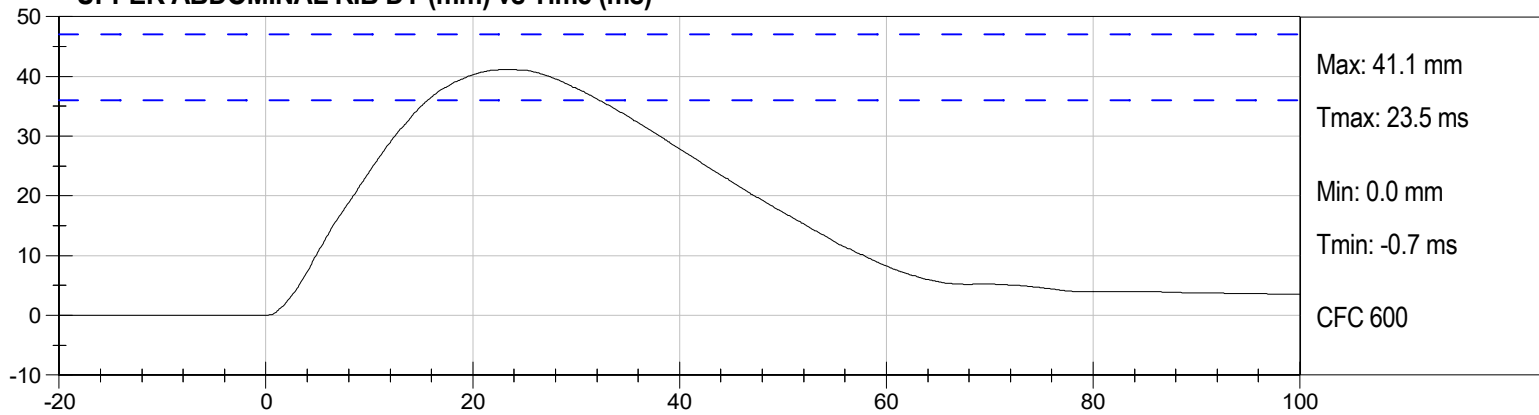
PROBE (g) vs Time (ms)



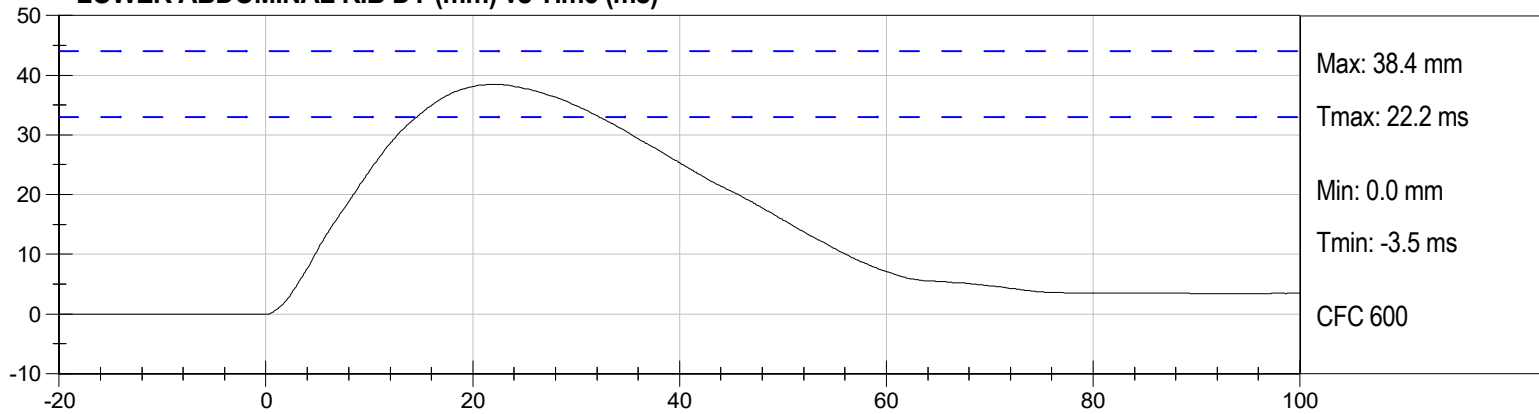
LOWER SPINE Y (g) vs Time (ms)



UPPER ABDOMINAL RIB DY (mm) vs Time (ms)



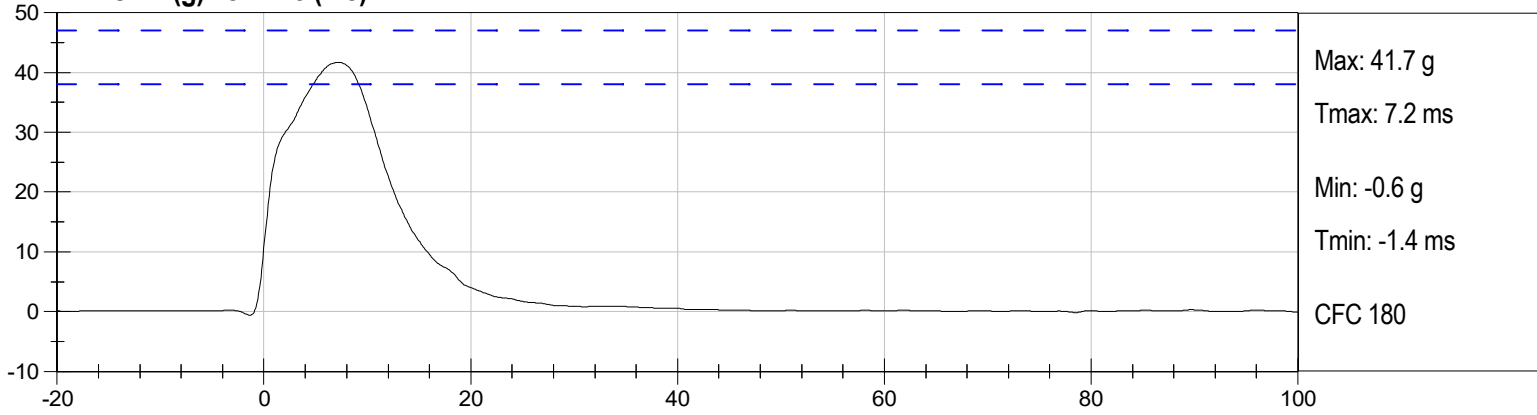
LOWER ABDOMINAL RIB DY (mm) vs Time (ms)



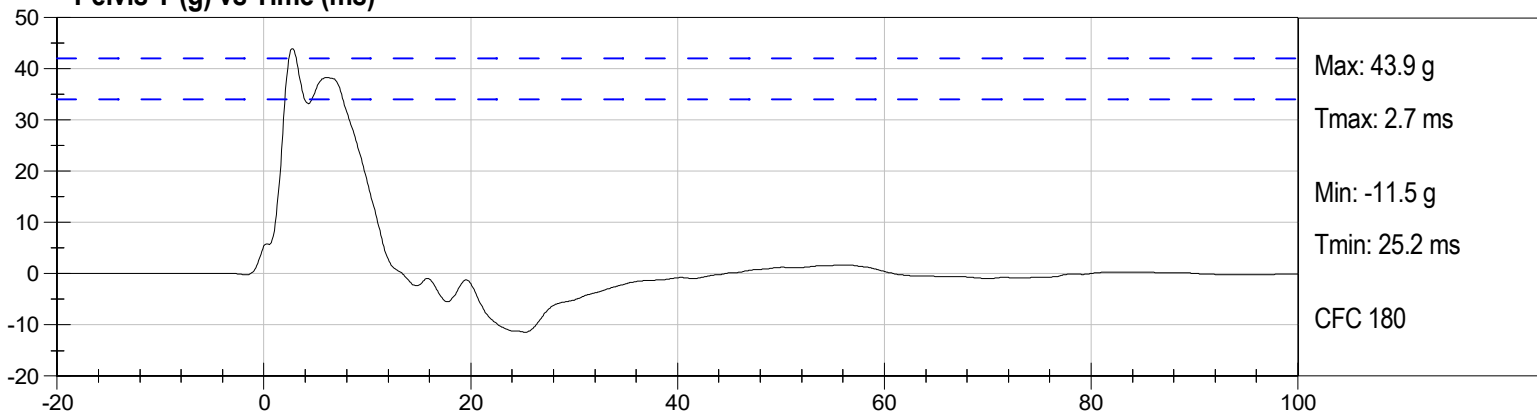
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration	g	38 to 47	42	Pass
Peak Pelvis Y Acceleration after 6 ms	g	34 to 42	38	Pass
Acetabulum Force	N	3600 to 4300	4012	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	09/18/2024	3/20/2025
Pelvis Y	Endevco	T22504	12/13/2024	6/14/2025
ACETABULUM FY	Denton	ACG269FY	01/20/2025	1/20/2026

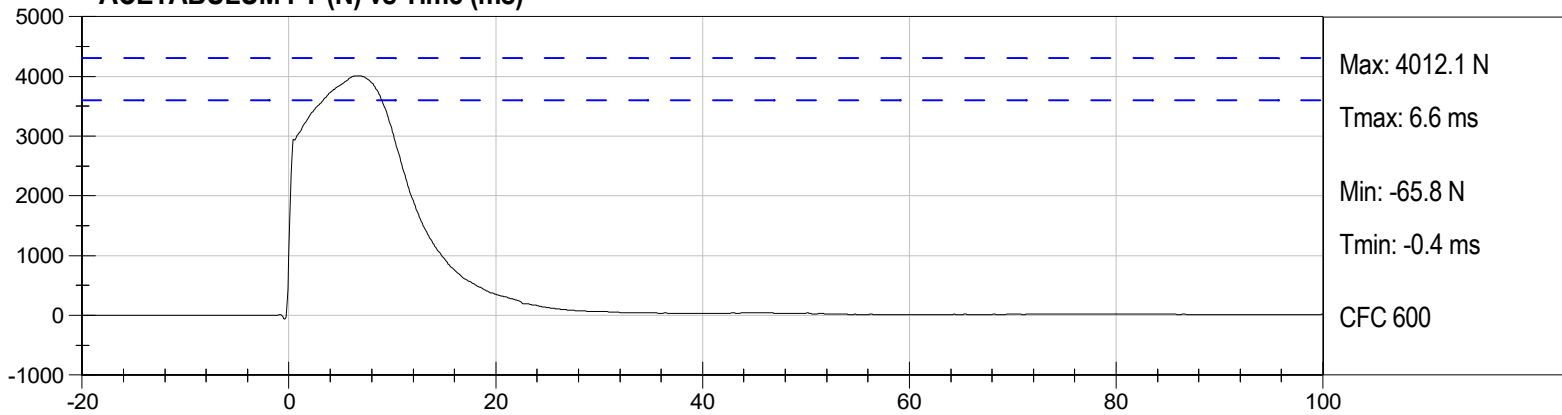
PROBE (g) vs Time (ms)



Pelvis Y (g) vs Time (ms)



ACETABULUM FY (N) vs Time (ms)





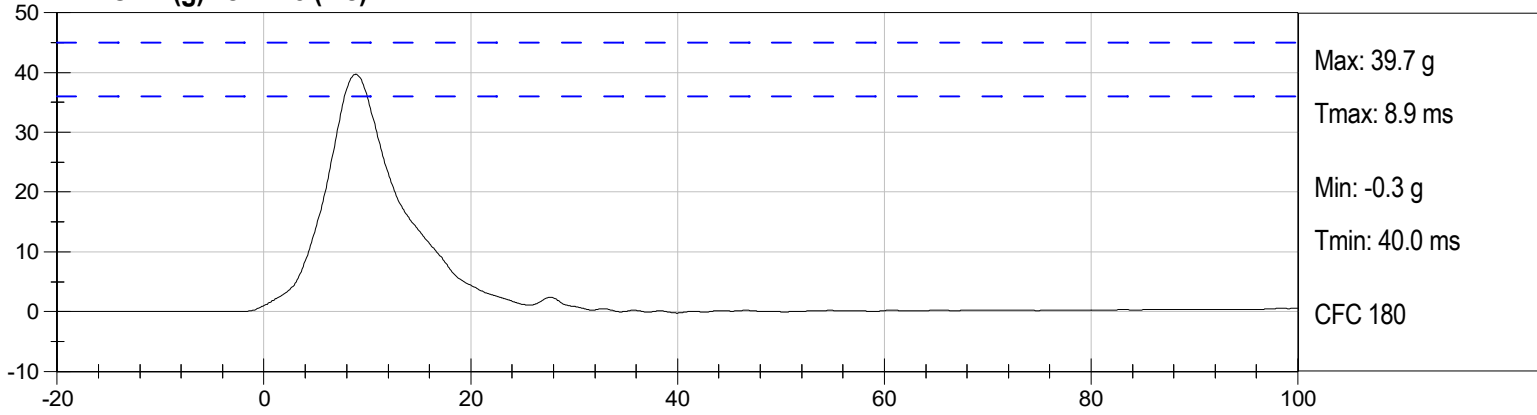
Iliac Impact Test
SID IIs
ATD Serial No: 296

Test Date: 02/20/2025
Test ID: D250558
Test Technician: Jonah Pulokas

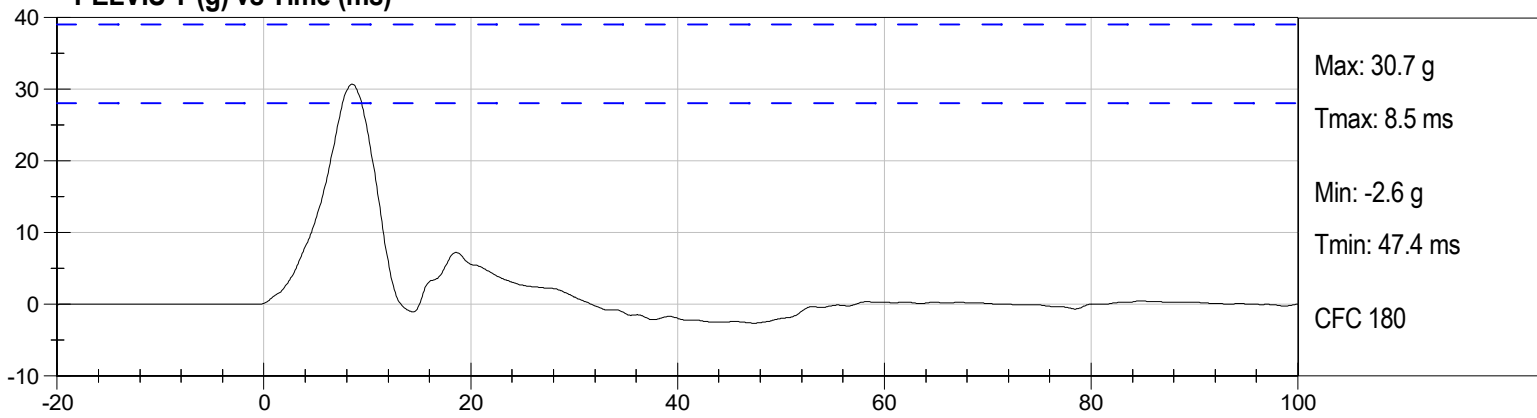
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Impact Velocity	m/s	4.2 to 4.4	4.37	Pass
Peak Probe Acceleration	g	36 to 45	40	Pass
Peak Pelvis Y Acceleration	g	28 to 39	31	Pass
Iliac Force	N	4100 to 5100	4608	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	09/18/2024	3/20/2025
PELVIS Y	Endevco	T22504	12/13/2024	6/14/2025
ILIUM CREST FY	Denton	IWG282FY	01/20/2025	1/20/2026

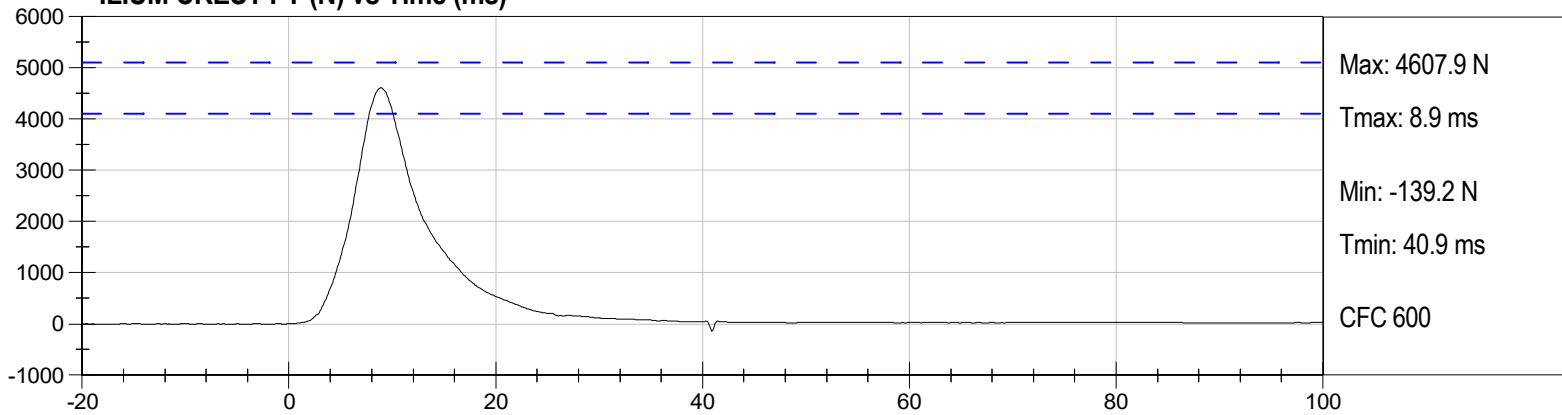
PROBE (g) vs Time (ms)



PELVIS Y (g) vs Time (ms)



ILIUM CREST FY (N) vs Time (ms)



QUALIFICATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - DRIVER ATD

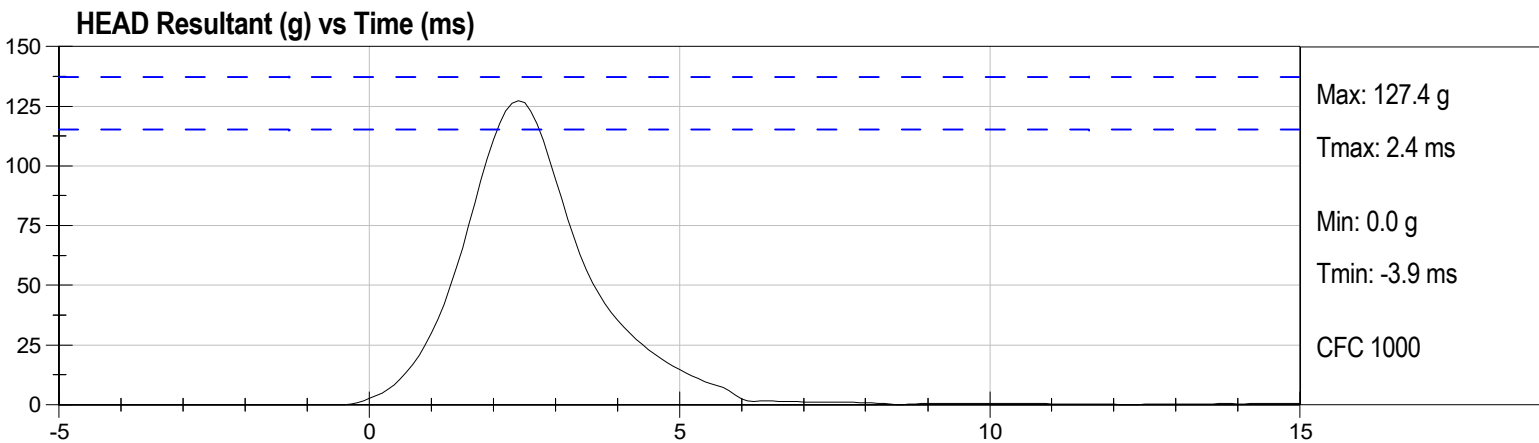
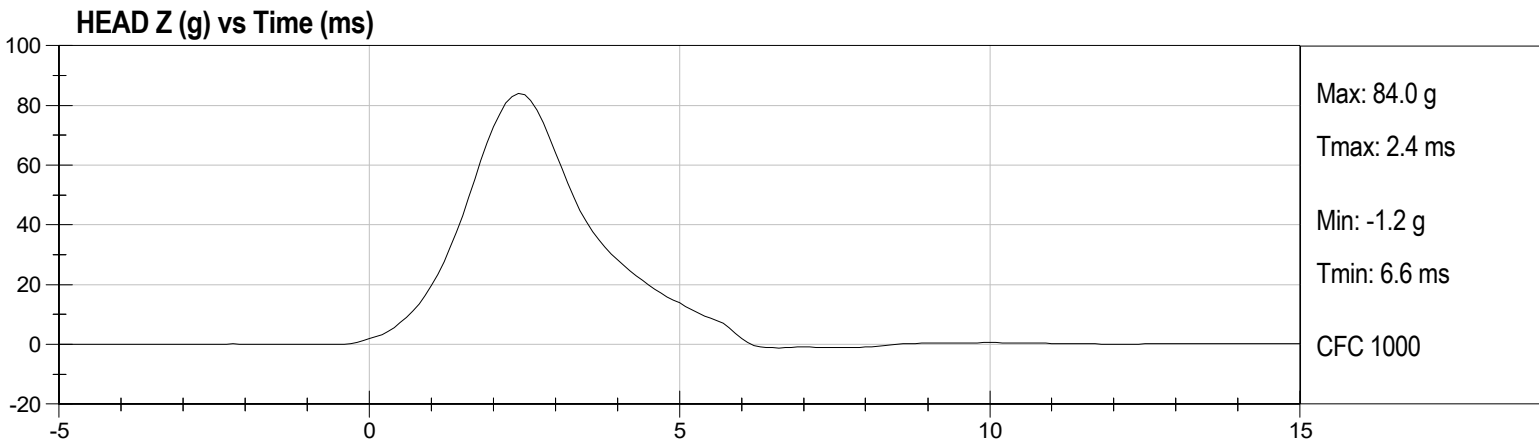
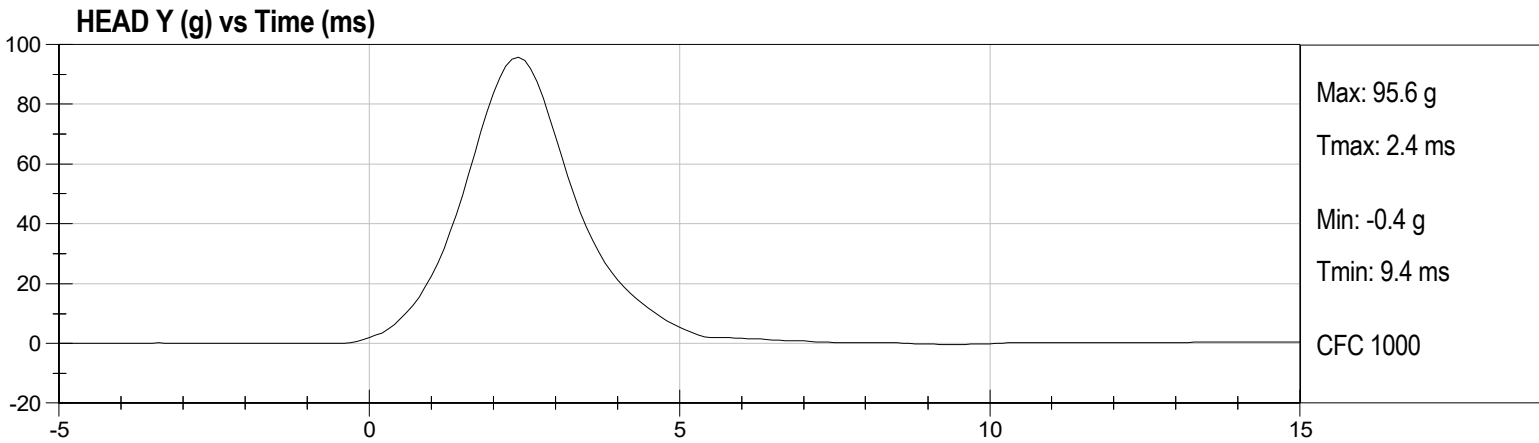
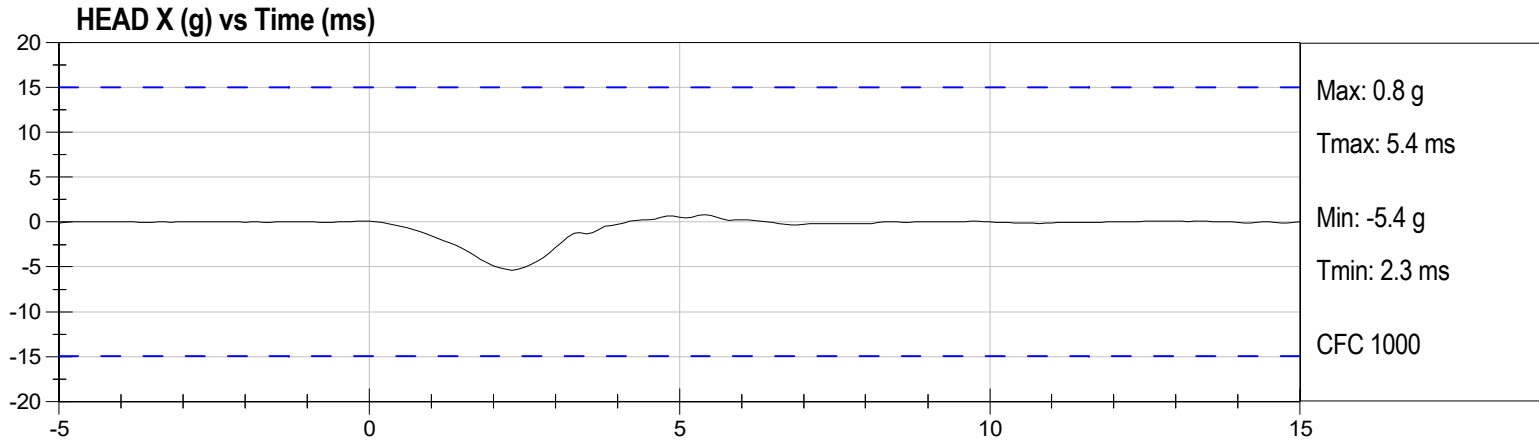
SID-IIsD External Measurements
SN: 296

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



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	41	Pass
Peak Resultant Acceleration	g	115 to 137	127	Pass
Peak Longitudinal Acceleration	g	-15.0 to 15.0	-5.4	Pass
Unimodal	%	within 15% of peak	1	Pass

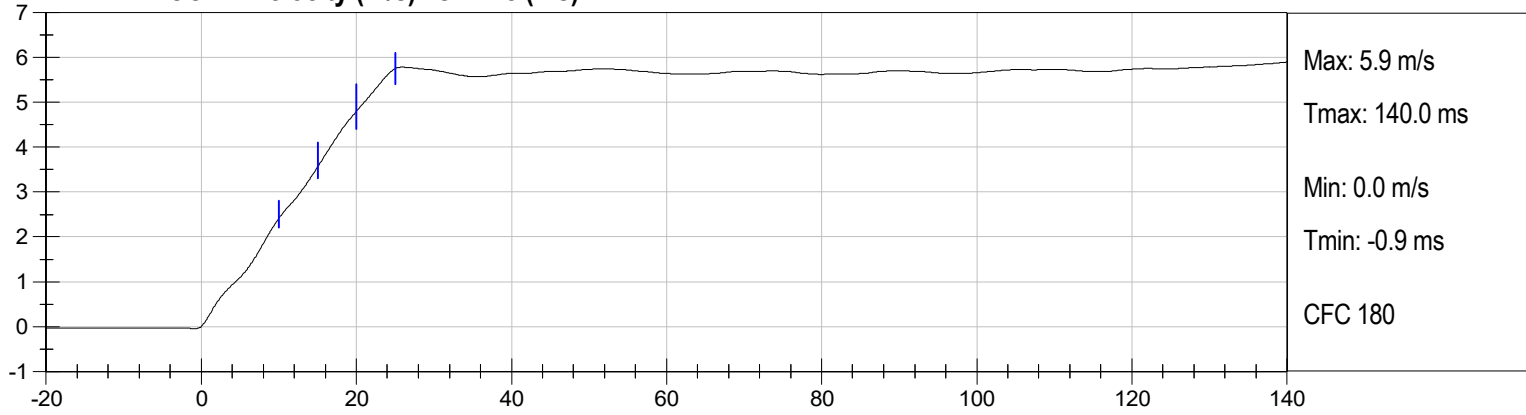
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
HEAD Y	Endevco	T30974	11/25/2024	5/27/2025
HEAD X	Endevco	T30975	11/25/2024	5/27/2025
HEAD Z	Endevco	T30976	11/25/2024	5/27/2025



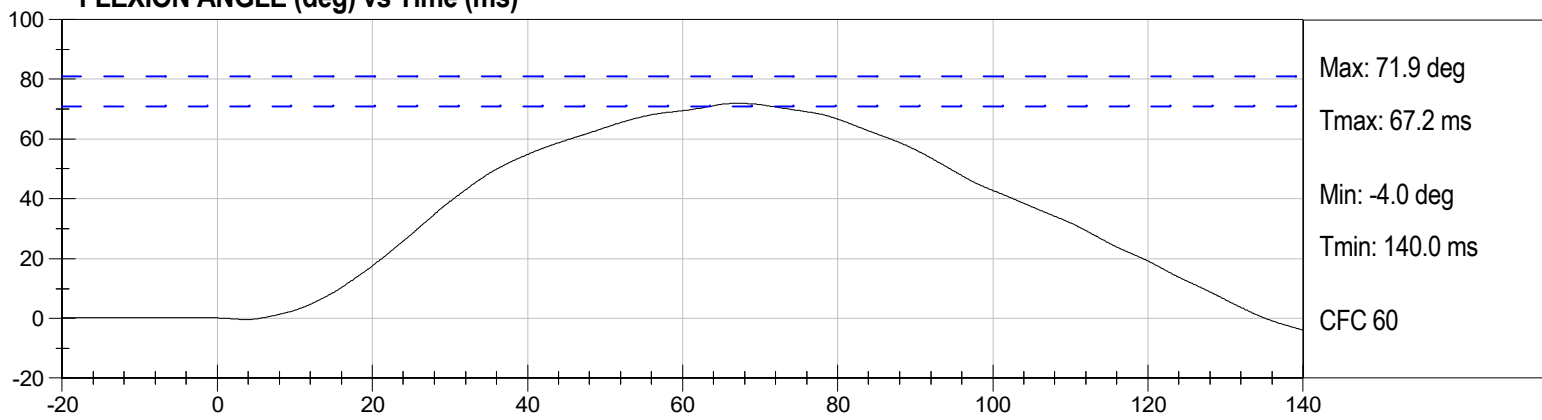
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	41	Pass
Impact Velocity	m/s	5.51 to 5.63	5.59	Pass
Pendulum Velocity at 10 ms	m/s	2.20 to 2.80	2.39	Pass
Pendulum Velocity at 15 ms	m/s	3.30 to 4.10	3.53	Pass
Pendulum Velocity at 20 ms	m/s	4.40 to 5.40	4.78	Pass
Pendulum Velocity at 25 ms	m/s	5.40 to 6.10	5.74	Pass
Peak Pendulum Velocity from 25 to 100 ms	m/s	5.50 to 6.20	5.79	Pass
Maximum "D" Plane Rotation	deg	71 to 81	72	Pass
Time of Maximum "D" Plane Rotation	ms	50 to 70	67	Pass
Maximum Moment About Occipital Condyle	Nm	-44 to -36	-36	Pass
Time of Moment Decay Time To 0 Nm	ms	102 to 126	119	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PEND. ACCEL.	Endevco	AH5P1	01/13/2025	7/15/2025
NECK FORCE Y	Denton	N1021FY	02/19/2025	2/19/2026
NECK MOMENT X	Denton	N1021MX	02/19/2025	2/19/2026
POT. A - FRONT	Servo	2732	01/09/2025	7/11/2025
POT. C - HEADFORM	Servo	2204	01/09/2025	7/11/2025

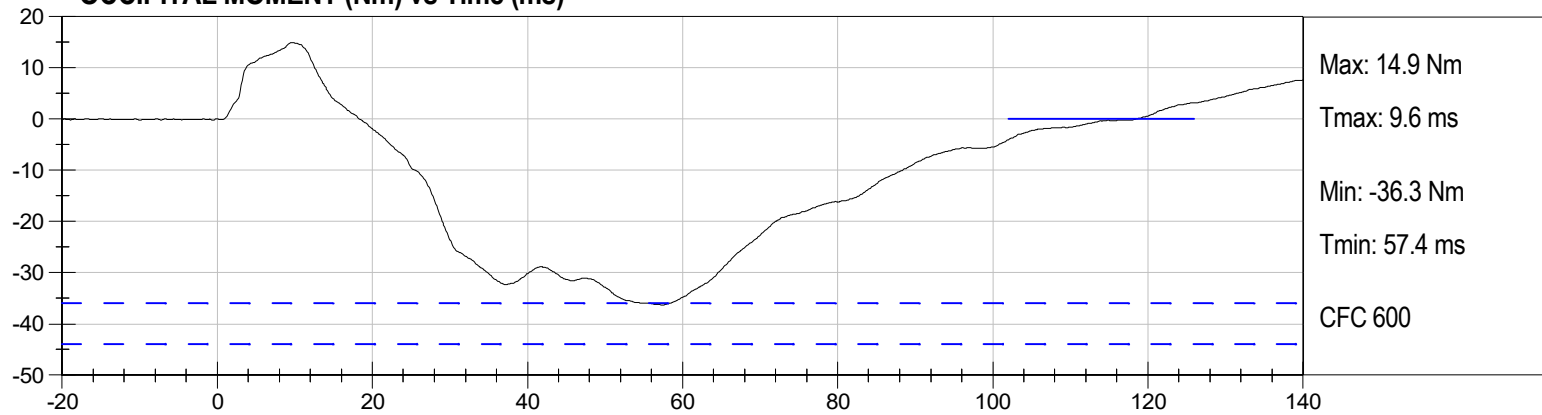
PEND. ACCEL. Velocity (m/s) vs Time (ms)



FLEXION ANGLE (deg) vs Time (ms)



OCCIPITAL MOMENT (Nm) vs Time (ms)



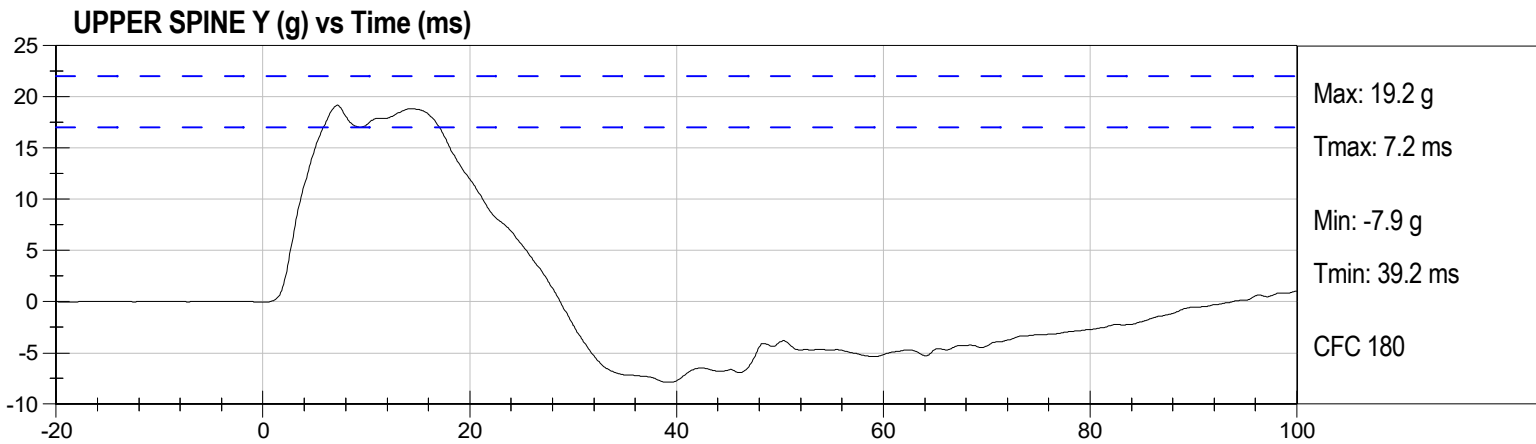
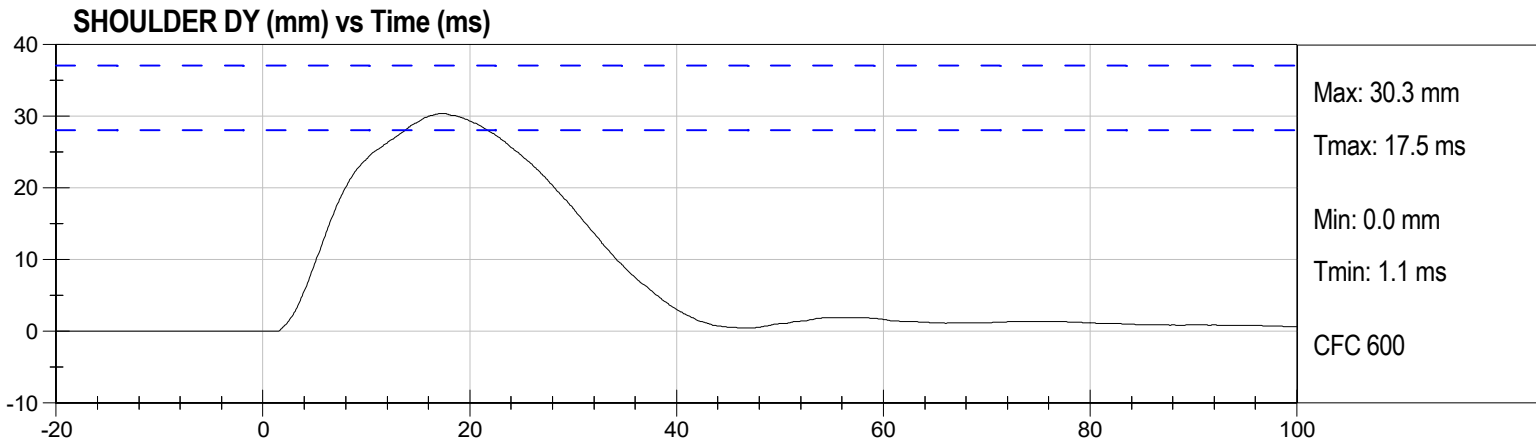
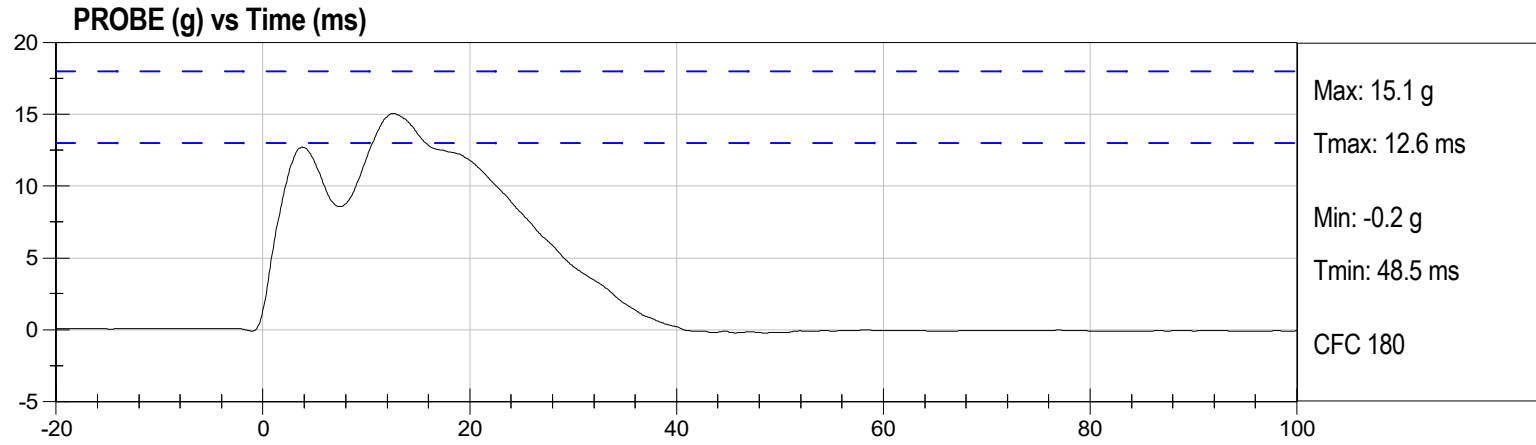


Shoulder Impact Test
SID IIs
ATD Serial No: 296

Test Date: 04/24/2025
Test ID: D251253
Test Technician: Jonah Pulokas

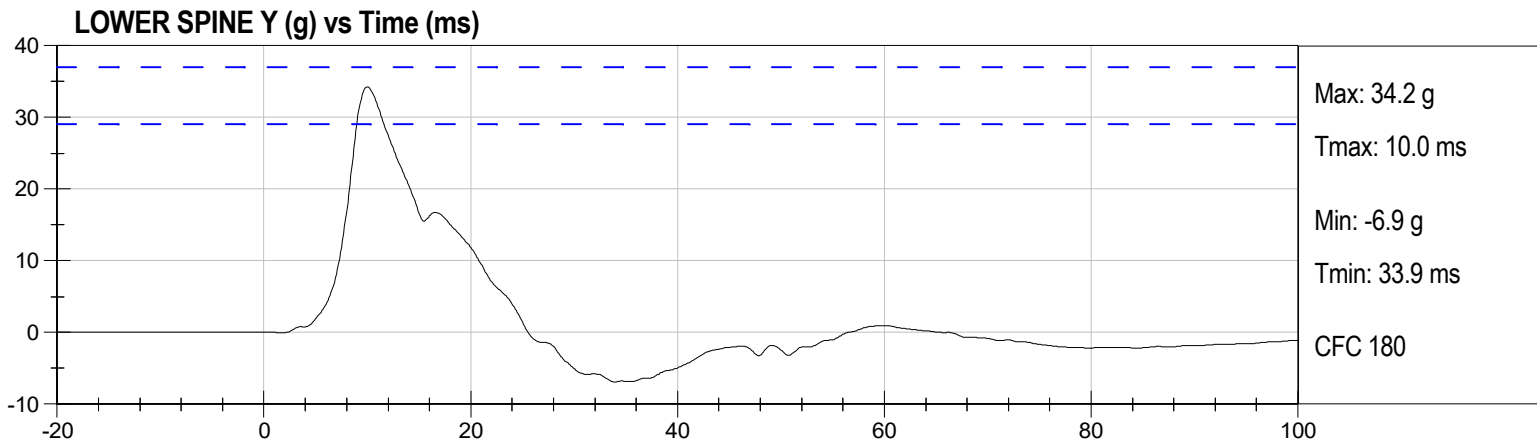
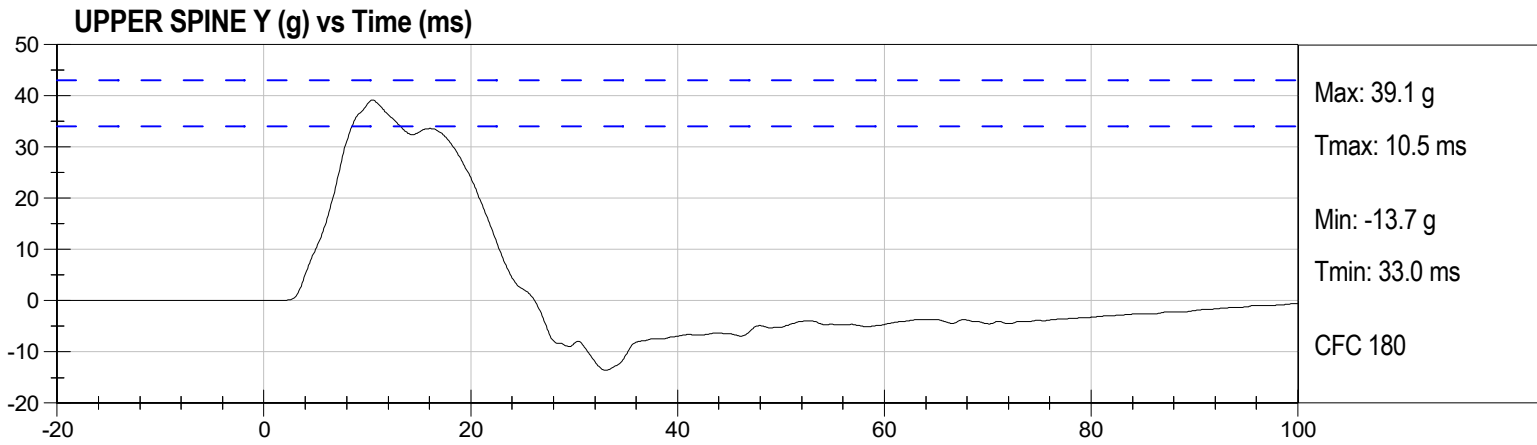
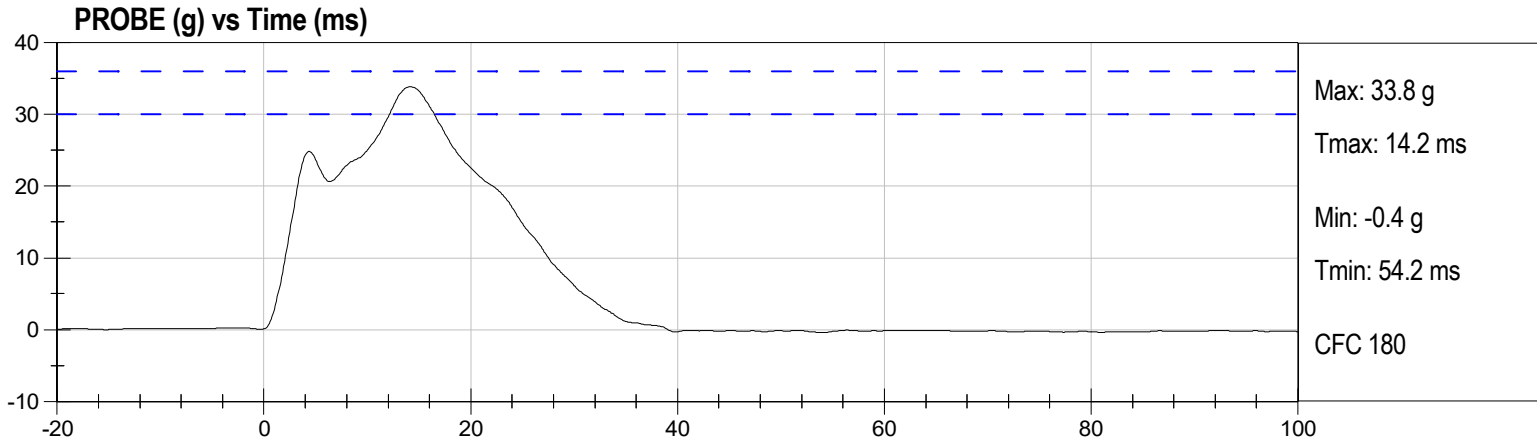
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Probe Acceleration	g	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	g	17 to 22	19	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P88675	12/12/2024	6/13/2025
SHOULDER DY	FTSS	G1223	12/12/2024	6/13/2025

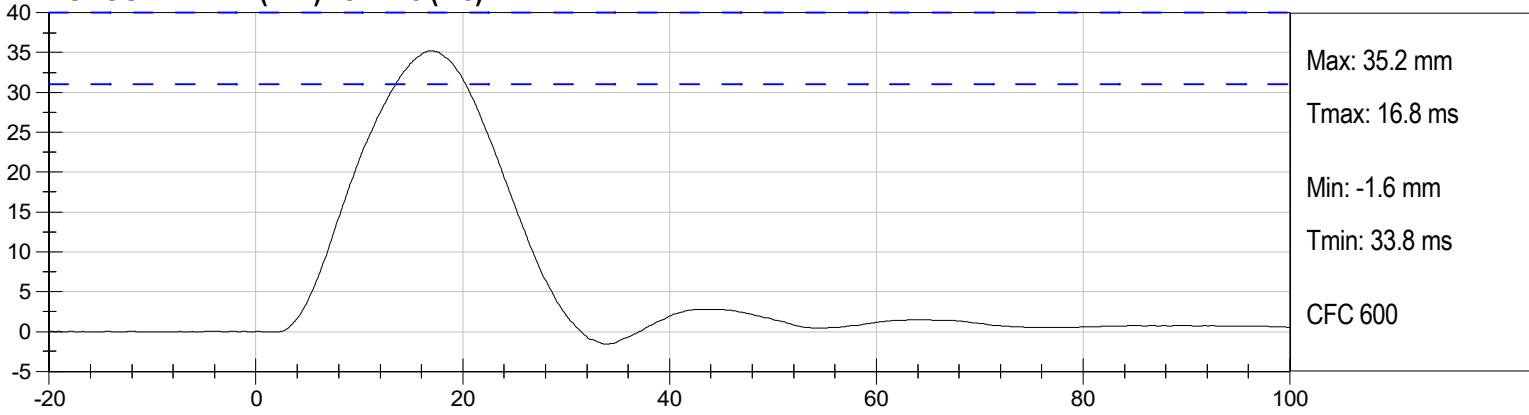


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration after 5 ms	g	30 to 36	34	Pass
Upper Spine (T1) Y Acceleration	g	34 to 43	39	Pass
Lower Spine (T12) Y Acceleration	g	29 to 37	34	Pass
Shoulder Displacement	mm	31 to 40	35	Pass
Upper Thorax Rib Displacement	mm	25 to 32	28	Pass
Middle Thorax Rib Displacement	mm	30 to 36	32	Pass
Lower Thorax Rib Displacement	mm	32 to 38	34	Pass

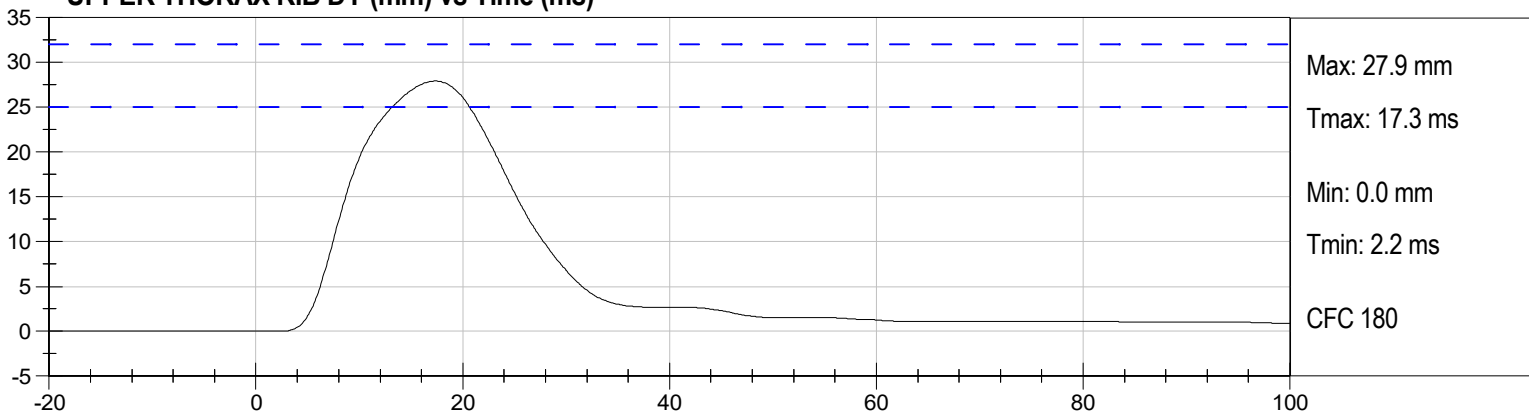
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P88675	12/12/2024	6/13/2025
LOWER SPINE Y	Endevco	P79439	12/12/2024	6/13/2025
SHOULDER DY	FTSS	G1223	12/12/2024	6/13/2025
UPPER THORAX RIB DY	Servo	G012	12/12/2024	6/13/2025
MID THORAX RIB DY	FTSS	G1163	12/12/2024	6/13/2025
LOWER THORAX RIB DY	FTSS	G1158	12/12/2024	6/13/2025



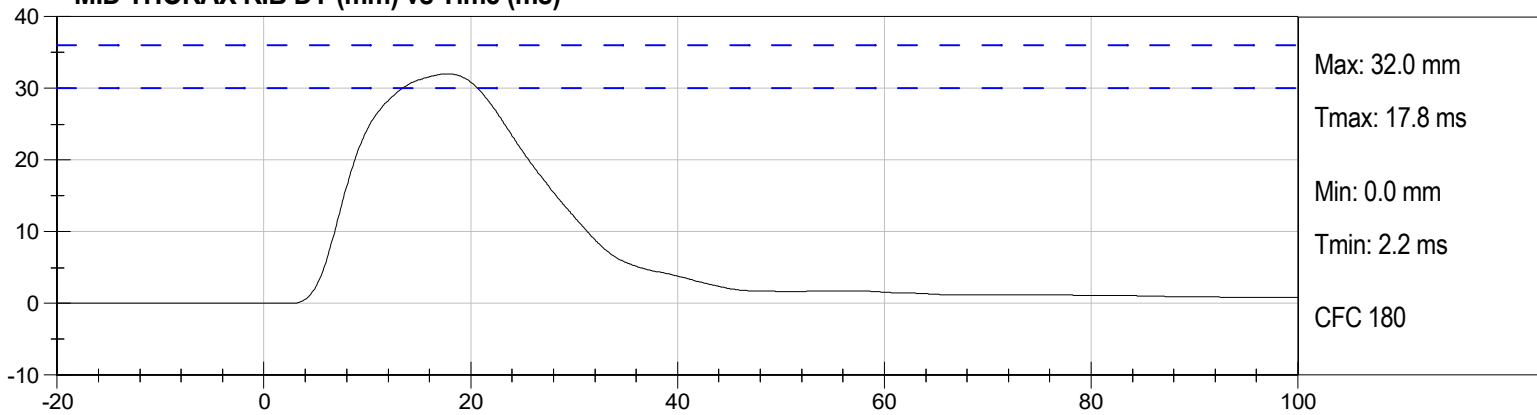
SHOULDER DY (mm) vs Time (ms)



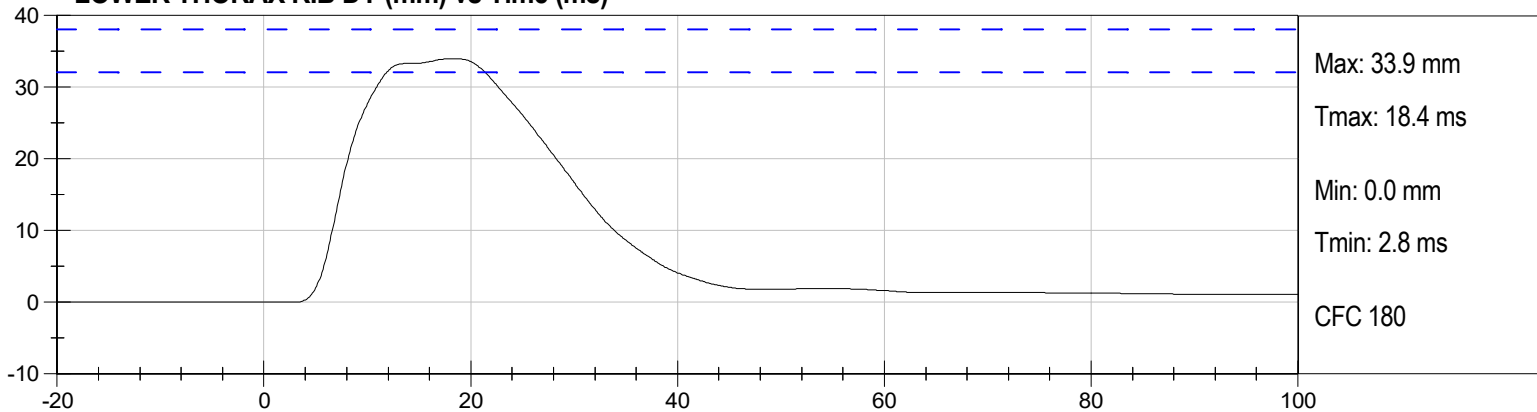
UPPER THORAX RIB DY (mm) vs Time (ms)



MID THORAX RIB DY (mm) vs Time (ms)

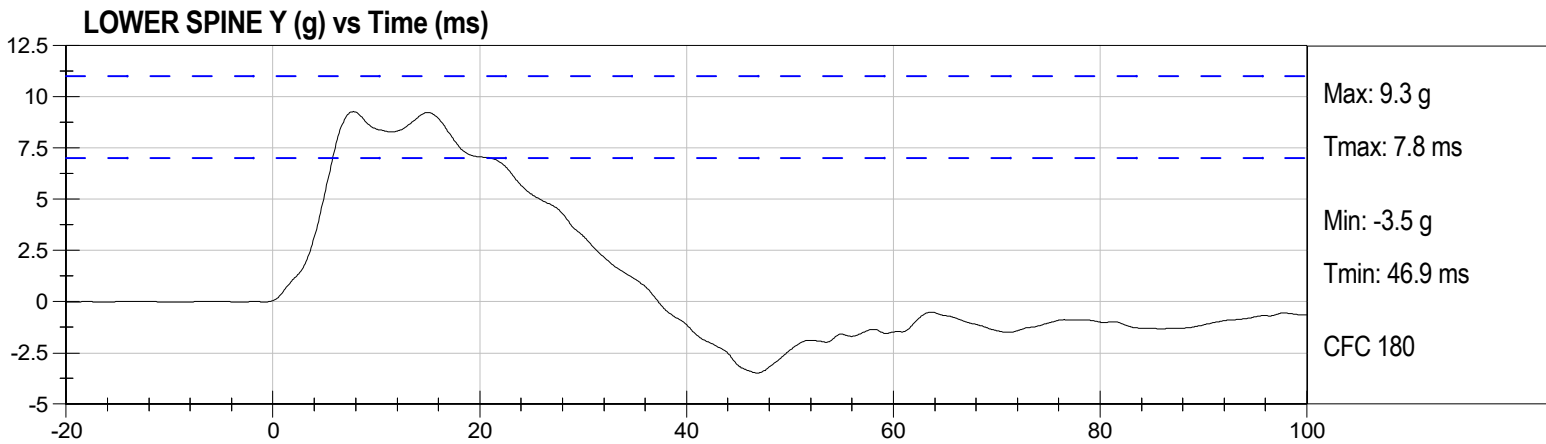
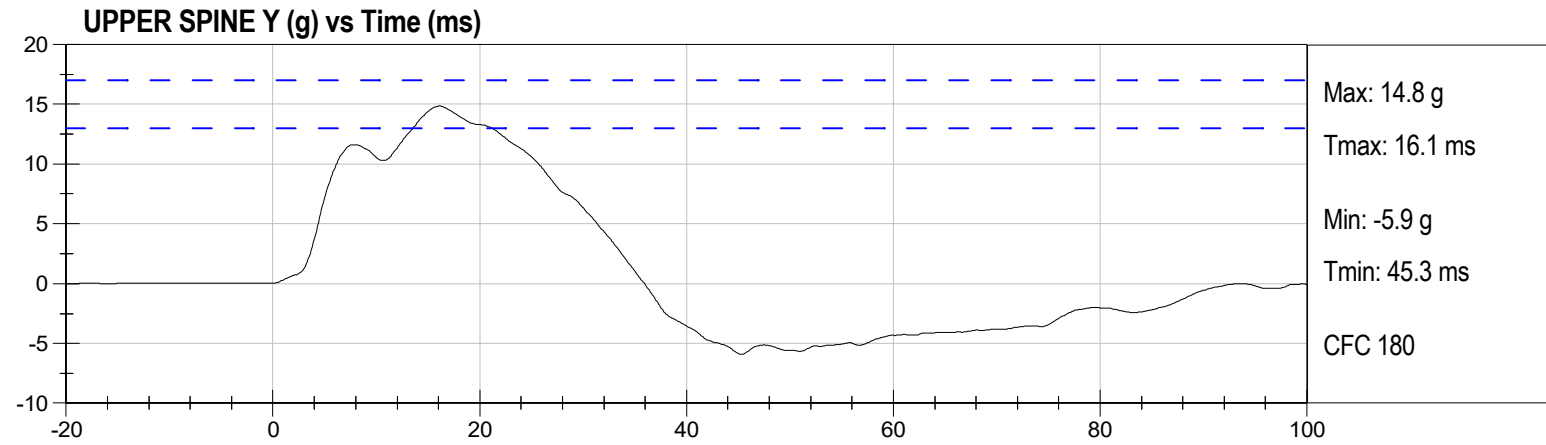
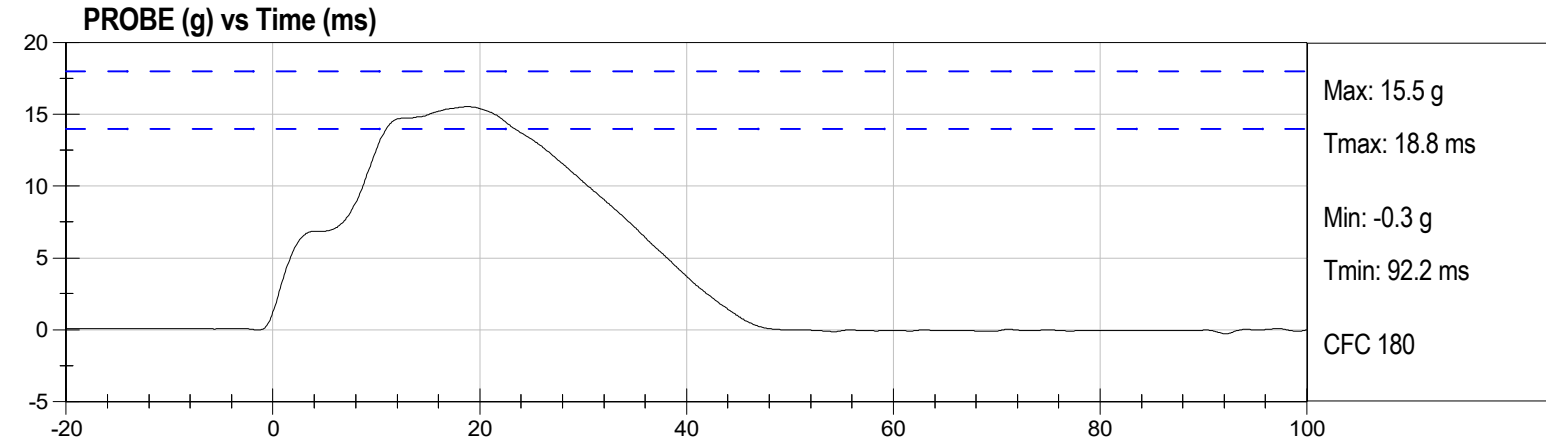


LOWER THORAX RIB DY (mm) vs Time (ms)

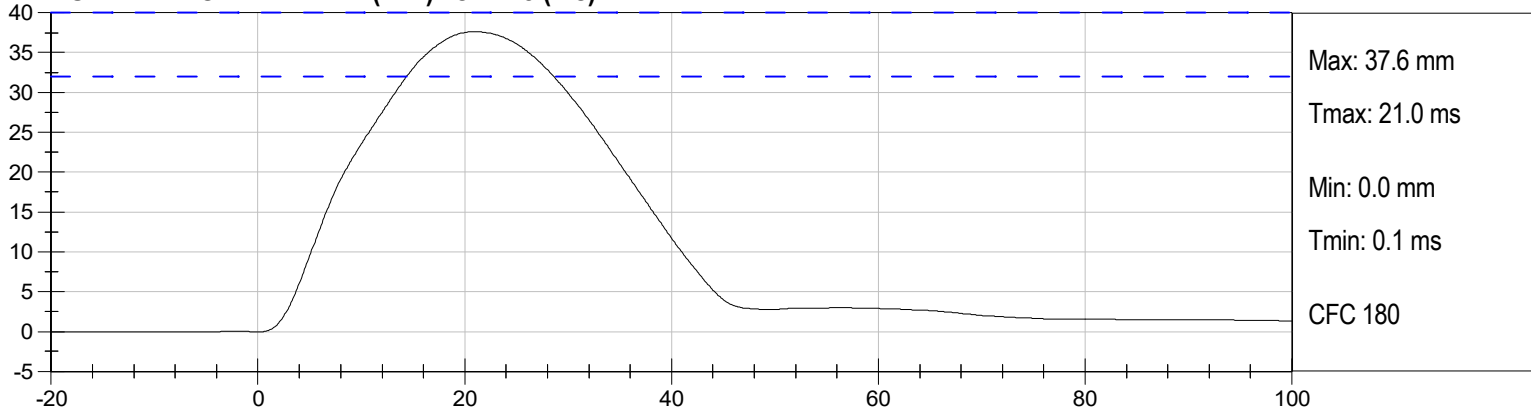


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	43	Pass
Impact Velocity	m/s	4.2 to 4.4	4.34	Pass
Peak Probe Acceleration	g	14 to 18	16	Pass
Upper Spine (T1) Y Acceleration	g	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	g	7 to 11	9	Pass
Upper Thorax Rib Displacement	mm	32 to 40	38	Pass
Middle Thorax Rib Displacement	mm	39 to 45	43	Pass
Lower Thorax Rib Displacement	mm	35 to 43	40	Pass

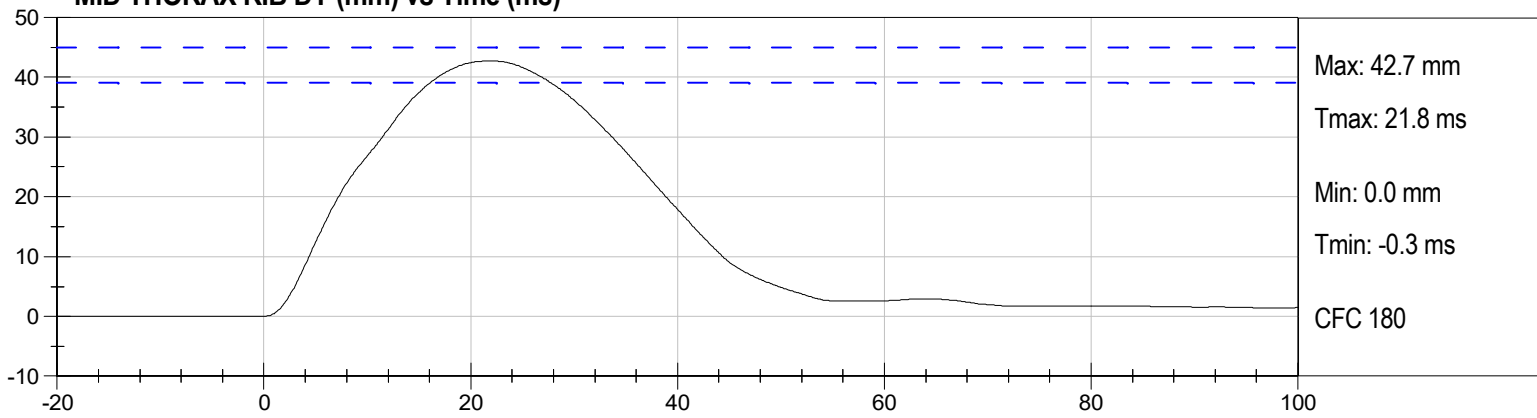
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P88675	12/12/2024	6/13/2025
LOWER SPINE Y	Endevco	P79439	12/12/2024	6/13/2025
UPPER THORAX RIB DY	Servo	G012	12/12/2024	6/13/2025
MID THORAX RIB DY	FTSS	G1163	12/12/2024	6/13/2025
LOWER THORAX RIB DY	FTSS	G1158	12/12/2024	6/13/2025



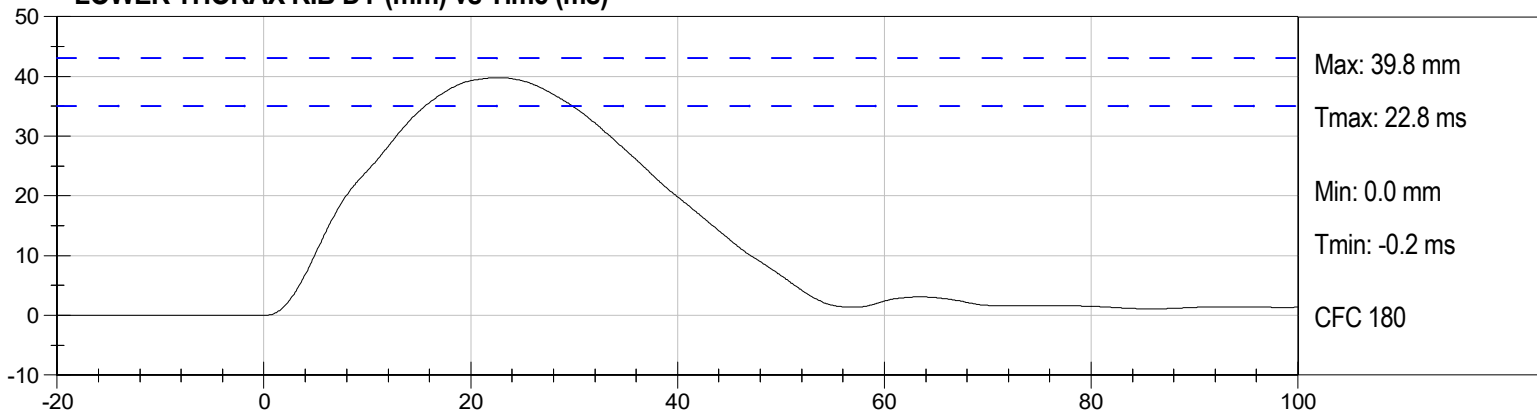
UPPER THORAX RIB DY (mm) vs Time (ms)



MID THORAX RIB DY (mm) vs Time (ms)



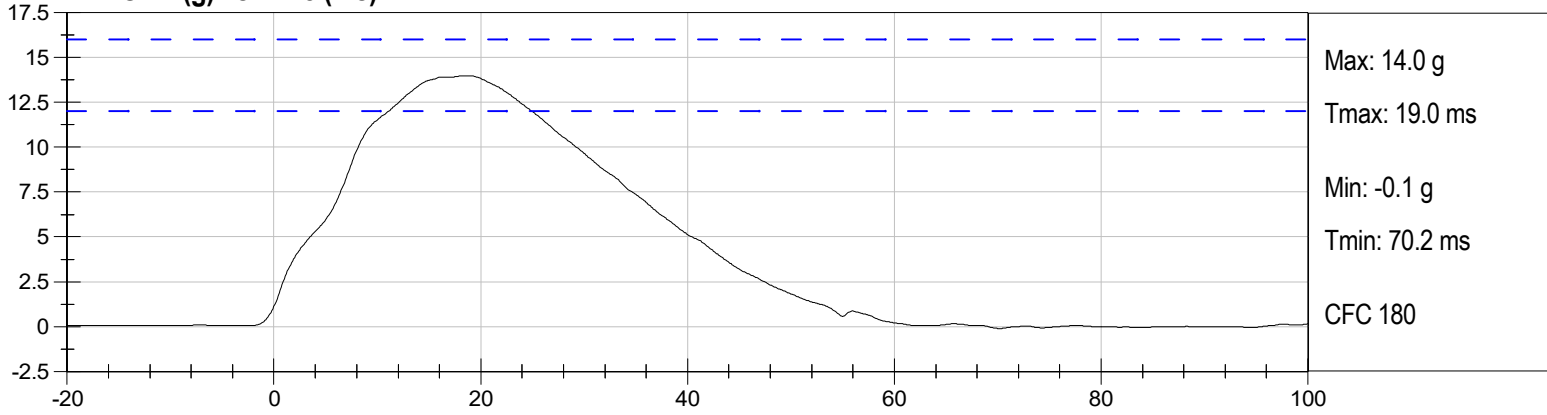
LOWER THORAX RIB DY (mm) vs Time (ms)



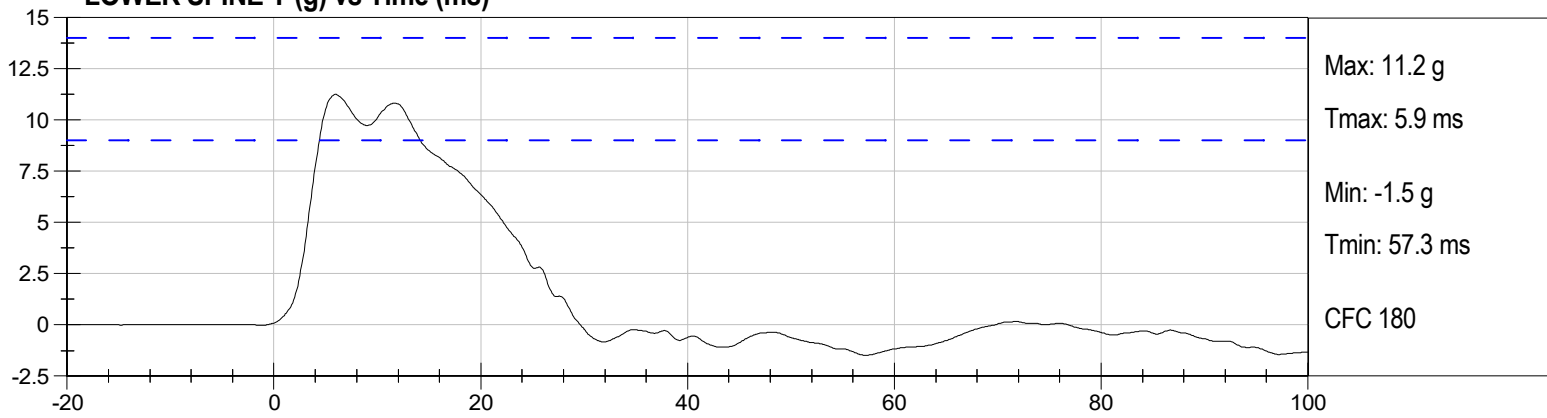
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	43	Pass
Impact Velocity	m/s	4.2 to 4.4	4.38	Pass
Peak Probe Acceleration	g	12 to 16	14	Pass
Lower Spine (T12) Y Acceleration	g	9 to 14	11	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	43	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	38	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
LOWER SPINE Y	Endevco	P79439	12/12/2024	6/13/2025
UPPER ABDOMINAL RIB DY	FTSS	G1146	12/12/2024	6/13/2025
LOWER ABDOMINAL RIB DY	FTSS	G1126	12/12/2024	6/13/2025

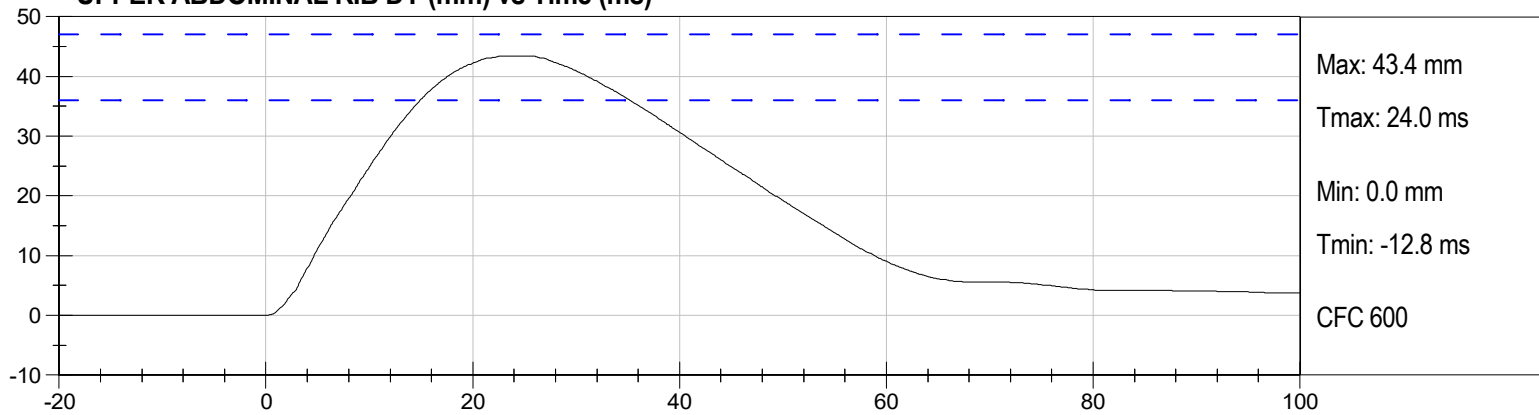
PROBE (g) vs Time (ms)



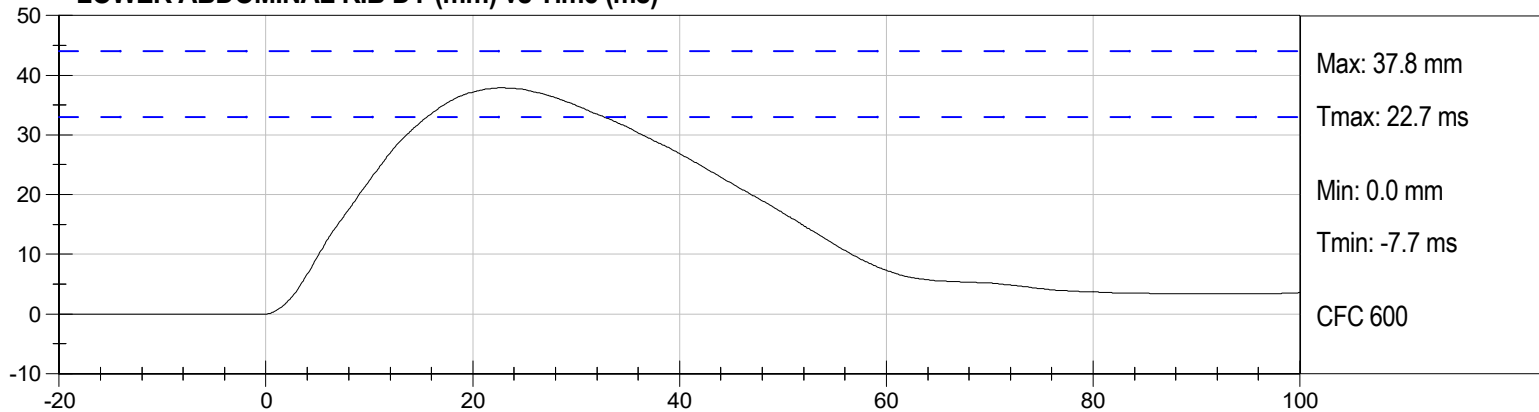
LOWER SPINE Y (g) vs Time (ms)



UPPER ABDOMINAL RIB DY (mm) vs Time (ms)



LOWER ABDOMINAL RIB DY (mm) vs Time (ms)

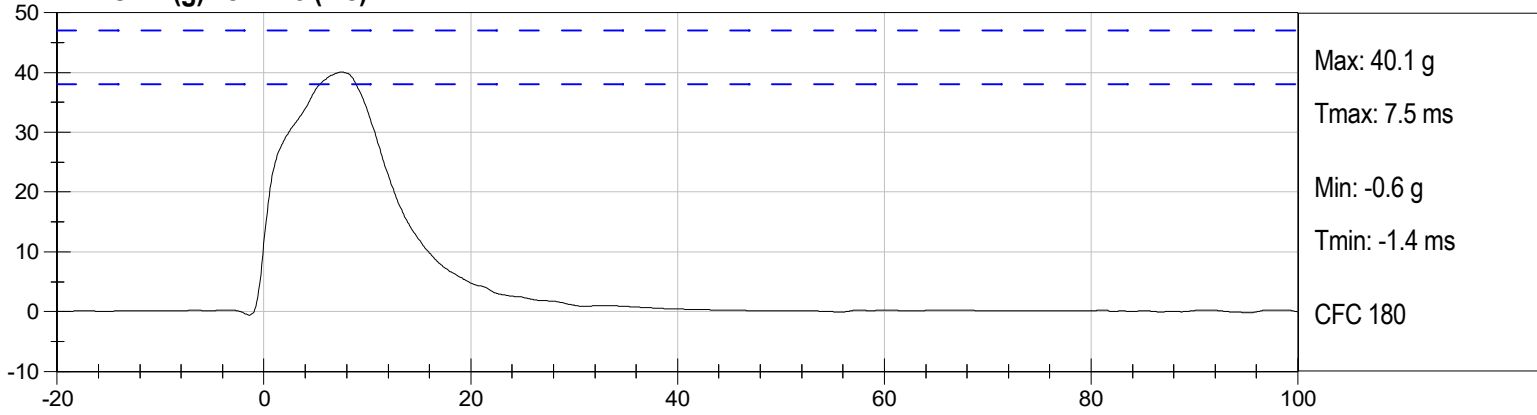




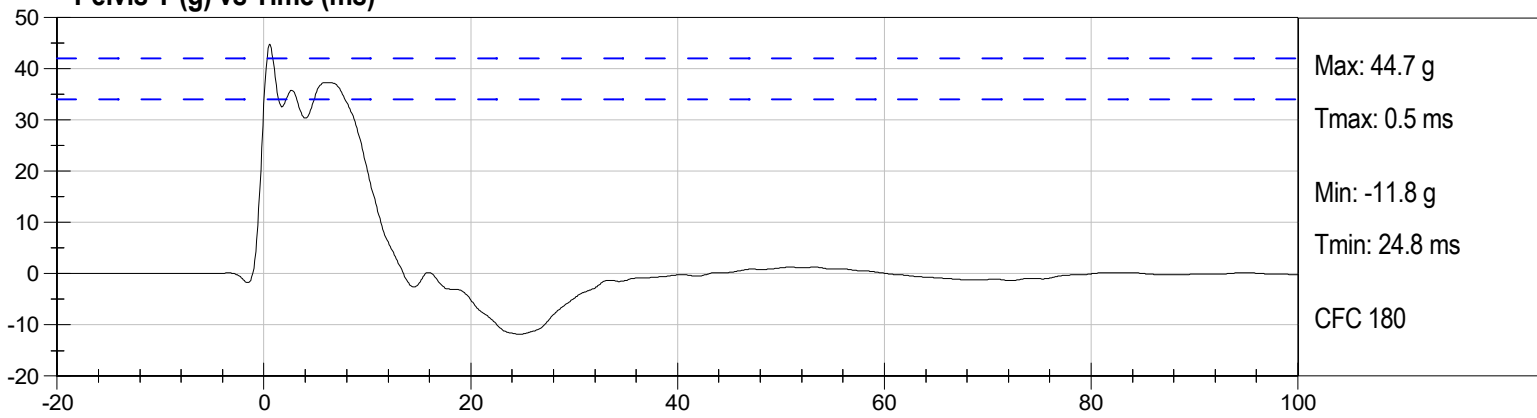
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	43	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration	g	38 to 47	40	Pass
Peak Pelvis Y Acceleration after 6 ms	g	34 to 42	37.3	Pass
Acetabulum Force	N	3600 to 4300	3815	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
Pelvis Y	Endevco	T22504	12/13/2024	6/14/2025
ACETABULUM FY	Denton	ACG269FY	01/20/2025	1/20/2026

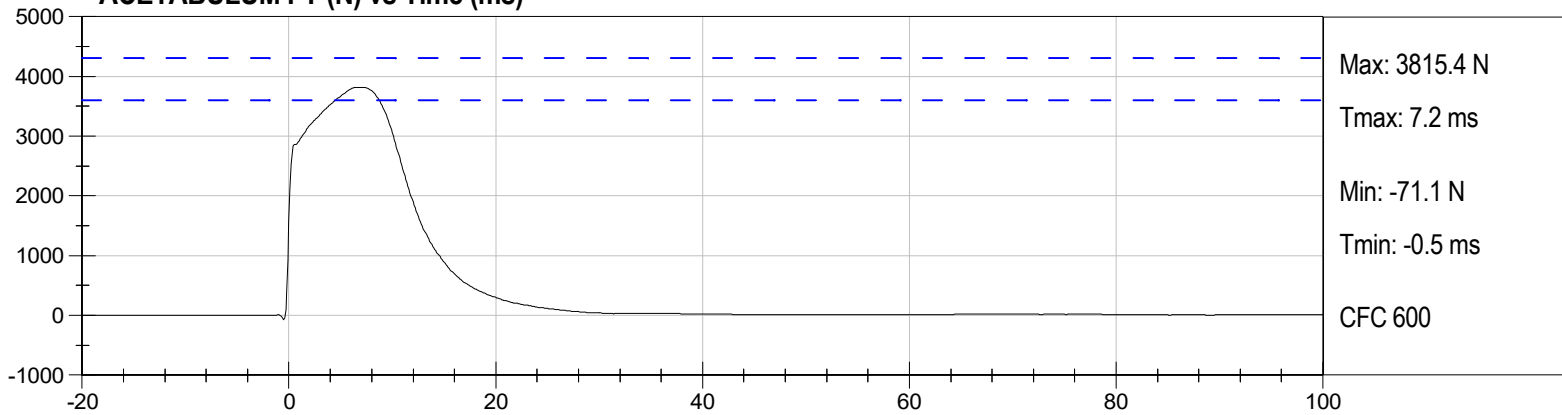
PROBE (g) vs Time (ms)



Pelvis Y (g) vs Time (ms)



ACETABULUM FY (N) vs Time (ms)





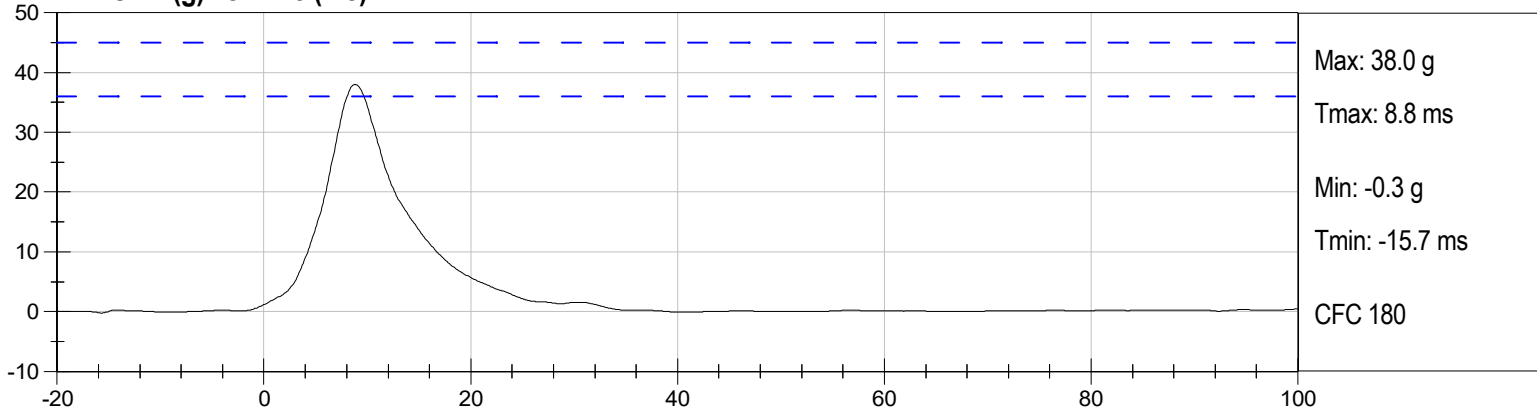
Iliac Impact Test
SID IIs
ATD Serial No: 296

Test Date: 04/24/2025
Test ID: D251258
Test Technician: Jonah Pulokas

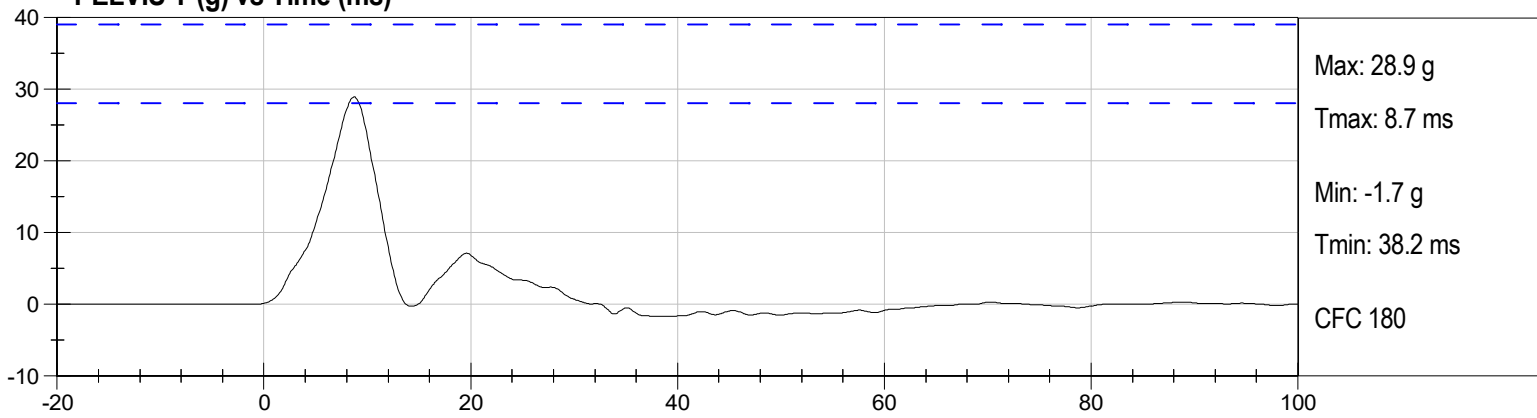
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.2 to 4.4	4.34	Pass
Peak Probe Acceleration	g	36 to 45	38	Pass
Peak Pelvis Y Acceleration	g	28 to 39	29	Pass
Iliac Force	N	4100 to 5100	4386	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
PELVIS Y	Endevco	T22504	12/13/2024	6/14/2025
ILIUM CREST FY	Denton	IWG282FY	01/20/2025	1/20/2026

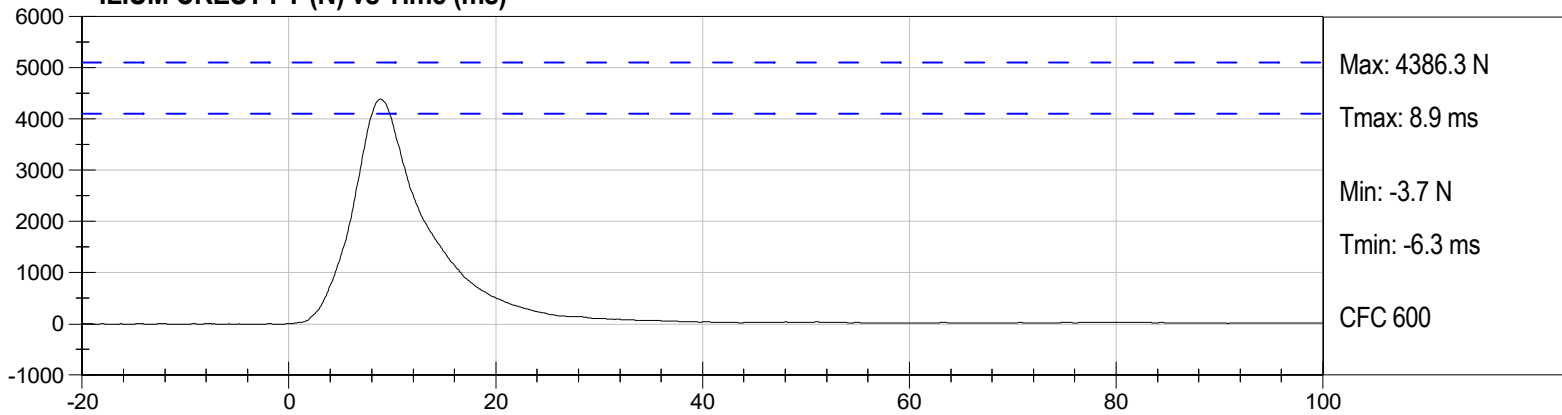
PROBE (g) vs Time (ms)



PELVIS Y (g) vs Time (ms)



ILIUM CREST FY (N) vs Time (ms)





SID-IIs Pelvis Plug Certification Test

Plug S/N 16428

Test Number 22997

Report Number 23055

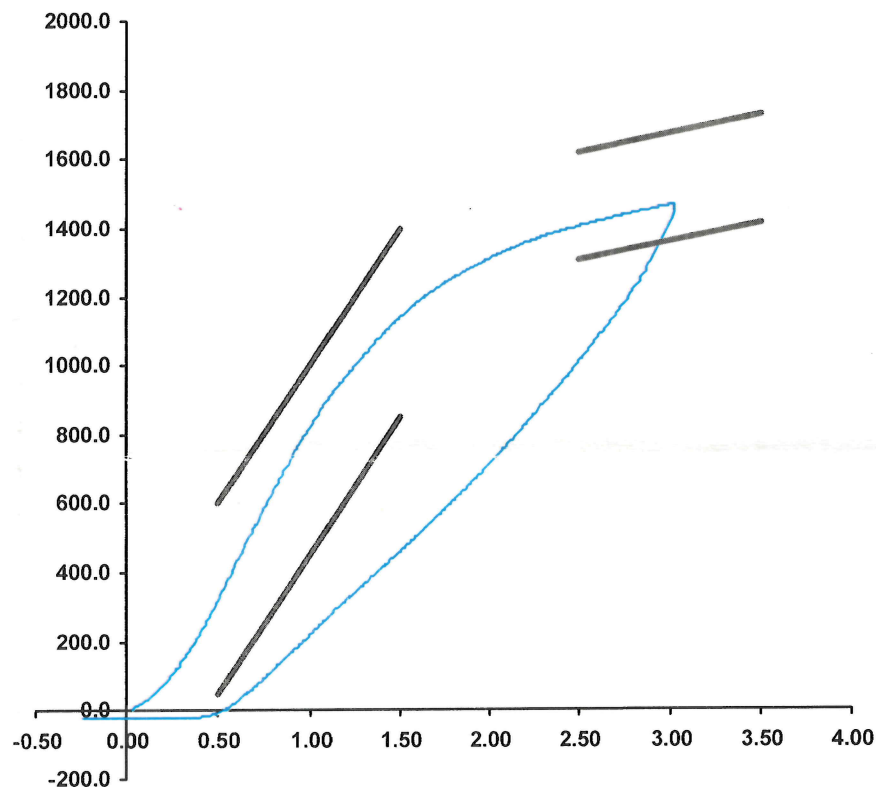
Test Date 5/23/2022 10:54:50 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	322	50	600
Force @ 1.5 mm (N)	1,139	850	1,400
Force @ 2.5 mm (N)	1,407	1,306	1,618
Force @ 3.0 mm (N)	1,467	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

23-May-22

SACO Research

By :

DC

Date

5/23/2022

SACO Research 41735 Elm St, #401 Murrieta, CA 92562

Tel 310-694-2082 FAX



SID-IIs Pelvis Plug Certification Test

Plug S/N 16426

Test Number 22995

Report Number 23053

Test Date 5/23/2022 10:50:25 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	359	50	600
Force @ 1.5 mm (N)	1,181	850	1,400
Force @ 2.5 mm (N)	1,422	1,306	1,618
Force @ 3.0 mm (N)	1,475	1,361	1,673

Testing Machine STM-20 5965542

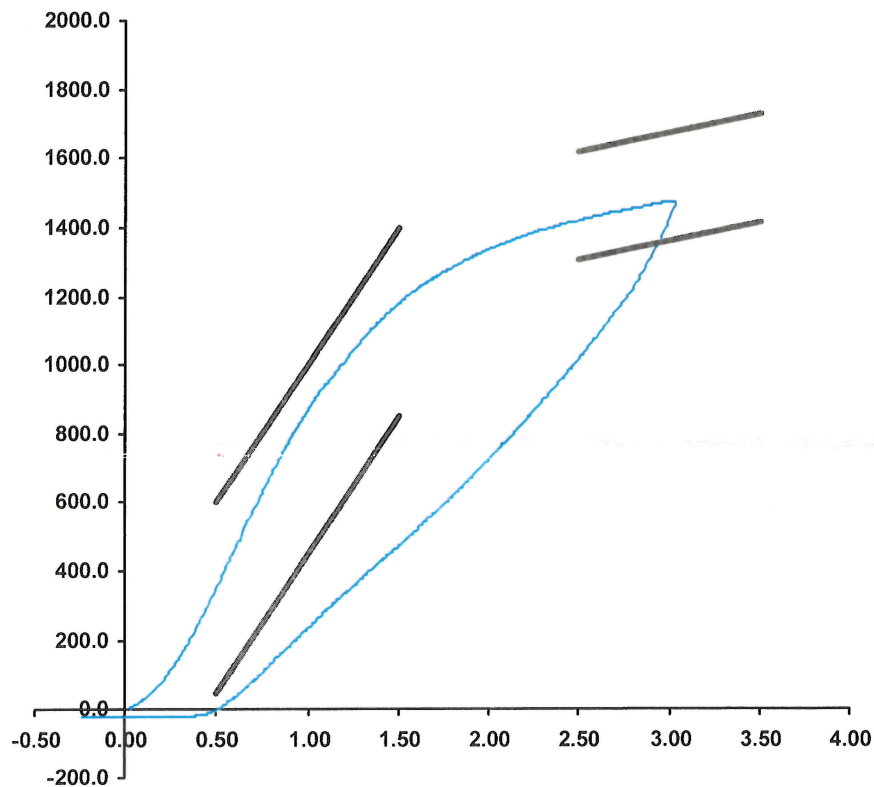
Load Cell S/N (FI360947), Units (LBS) 1000

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

23-May-22

SACO Research

By :

DC

Date :

5/23/2022

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	12/12/2024
				Y	P94783	Endevco	12/12/2024
				Z	P94786	Endevco	12/12/2024
				Xr	P94938	Endevco	12/12/2024
				Yr	P96854	Endevco	12/12/2024
				Zr	P97386	Endevco	12/12/2024
Head Angular Rate Sensors				X	ARS15213	DTS	07/31/2024
				Y	ARS15229	DTS	07/31/2024
				Z	ARS15231	DTS	07/31/2024
Displacement Potentiometers	Thoracic Rib	Upper	Y	G012	Servo	12/12/2024	
		Middle	Y	G1163	FTSS	12/12/2024	
		Lower	Y	G1158	FTSS	12/12/2024	
	Abdominal Rib	Upper	Y	G1146	FTSS	12/12/2024	
		Lower	Y	G1126	FTSS	12/12/2024	
Lower Spine Accelerometers (T12)				X	P79614	Endevco	12/12/2024
				Y	P79439	Endevco	12/12/2024
				Z	P79418	Endevco	12/12/2024
Acetabulum Load Cell				Y	ACG269	Denton	01/20/2025
Iliac Wing Load Cell				Y	IWG282	Denton	01/20/2025
Pelvis Plug (struck side)					16428	SACO	05/23/2022
Pelvis Plug (non-struck side)					16426	SACO	05/23/2022

Table 2 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	T45520	Endevco	04/16/2025
Vehicle Center of Gravity	Y	T43998	Endevco	04/16/2025
Vehicle Center of Gravity	Z	T40114	Endevco	04/16/2025
Left Floor Sill	Y	T42814	Endevco	04/16/2025
A-Pillar Sill	Y	T43399	Endevco	04/16/2025
A-Pillar Low	Y	T44019	Endevco	02/02/2025
A-Pillar Mid	Y	T44177	Endevco	10/31/2024
B-Pillar Sill	Y	T43433	Endevco	04/16/2025
B-Pillar Low	Y	T45292	Endevco	02/02/2025
B-Pillar Mid	Y	T45300	Endevco	02/05/2025
Driver Seat	Y	T42713	Endevco	04/15/2025
Engine Top	X	T45535	Endevco	03/19/2025
Engine Top	Y	T43429	Endevco	03/18/2025
Firewall	Y	T43772	Endevco	04/16/2025
Right Roof	Y	T45542	Endevco	03/14/2025
Right Floor Sill	Y	T43781	Endevco	04/16/2025
Rear Floorpan	X	T42654	Endevco	04/16/2025
Rear Floorpan	Y	T43736	Endevco	04/16/2025

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