

REPORT NUMBER: SideNCAPMDB-MGA-25-027

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

**TOYOTA MOTOR CORPORATION
2025 Toyota 4Runner 2WD SR5 5-Door SUV
NHTSA No.: M20255104**

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



Test Date: August 6, 2025

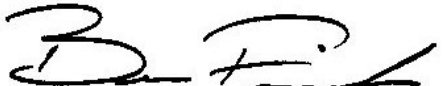
Final Report Date: May 21, 2026

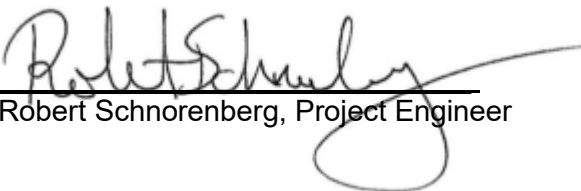
FINAL REPORT

**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 21, 2026

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

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

Date: _____

TECHNICAL REPORT DOCUMENTATION PAGE

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4. Title and Subtitle Final Report of New Car Assessment Program Side Impact MDB Testing of 2025 Toyota 4Runner 2WD SR5 5-Door SUV, NHTSA No.: M20255104		5. Report Date May 21, 2026																																																					
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15. Supplementary Notes		14. Sponsoring Agency Code NRM-100																																																					
16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2025 Toyota 4Runner 2WD SR5 5-Door SUV in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP MDB Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the MGA Research Corporation facility in Burlington, Wisconsin on August 6, 2025. The impact velocity of the Moving Deformable Barrier (MDB) was 62.11 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.7°C. The target vehicle post-test maximum crush was 130 mm at level 2. The test vehicle's performance was as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD (ES-2re)</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>25.170</td> </tr> <tr> <td>Maximum Thorax Rib Deflection</td> <td>mm</td> <td>44</td> <td>10.647</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>317.511</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>894.375</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82*</td> <td>15.135</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Passenger 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>64.747</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>28.244</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>2159.422</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>2.737</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>10.279</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 (ES-2re)		Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	25.170	Maximum Thorax Rib Deflection	mm	44	10.647	Total Abdominal Force	N	2500	317.511	Pubic Symphysis Force	N	6000	894.375	Resultant Lower Spine Acceleration	g	82*	15.135	Measurement Description	Units	Passenger ATD (SID-IIs)		Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	64.747	Resultant Lower Spine Acceleration	g	82	28.244	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2159.422	Maximum Thoracic Rib Deflection	mm	38*	2.737	Maximum Abdomen Rib Deflection	mm	45*	10.279
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SECTION 1 PURPOSE AND SUMMARY OF TEST

PURPOSE

This moving deformable barrier side 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 4Runner 2WD SR5 5-Door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Laboratory Test Procedure dated March 2020.

SUMMARY

A 2025 Toyota 4Runner 2WD SR5 5-Door SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.11 km/h. The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin on August 6, 2025. Pre-test and post-test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS NCAP Side Laboratory Test Procedure dated March 2020. The side impact event was documented by eleven (11) cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

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

PASSENGER ATD (SID-IIs)

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

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

Dummy Injury readings were recorded as follows:

DUMMY INJURY VALUES

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	25.170
Maximum Thorax Rib Deflection	mm	44	10.647
Total Abdominal Force	N	2500	317.511
Pubic Symphysis Force	N	6000	894.375
Resultant Lower Spine Acceleration	g	82*	15.135

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	64.747
Resultant Lower Spine Acceleration	g	82	28.244
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2159.422
Maximum Thoracic Rib Deflection	mm	38*	2.737
Maximum Abdomen Rib Deflection	mm	45*	10.279

*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	No	
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 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20255104	Traction Control System (TCS)	Yes
Model Year	2025	Auto-Leveling System	No
Make	Toyota	Automatic Door Locks (ADL)	Yes
Model	4Runner 2WD SR5	Power Window Auto-Reverse	Yes
Body Style	5-Door SUV	Other Optional Feature	No
VIN	JTEVA5AR4S5004065	Driver Front Airbag	Yes
Body Color	Cutting Edge	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	56 km / 35 mi	Driver Head/Torso Airbag	No
Engine Displacement (L)	2.4	Driver Torso Airbag	No
Type/No. Cylinders	Inline 4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Longitudinal	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	8	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	RWD	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	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
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DATA FROM CERTIFICATION LABEL

Manufactured By	TOYOTA MOTOR CORPORATION	GVWR (kg)	2725
Date of Manufacture	05/25	GAWR Front (kg)	1305
Vehicle Type	MPV	GAWR Rear (kg)	1650

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				405	(A)
DSC x 68 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				60	(A-B)

* Rated Cargo and Luggage Weight (RCLW) reduced by 5 kg to account for Load Carrying Capacity Reduction Label.

VEHICLE SEAT TYPE

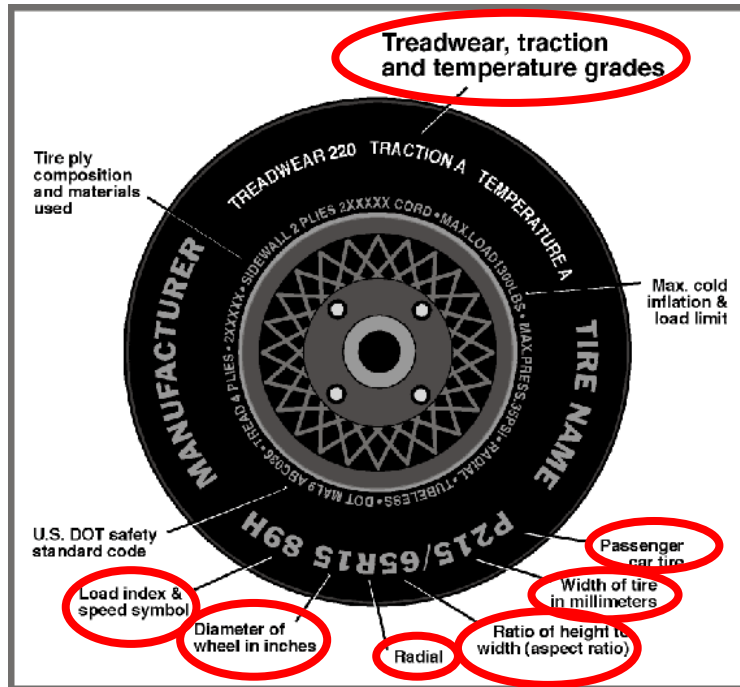
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	X					X	
Rear or Second Row			X			X	
Third Row Seat							

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	230	230
Recommended Tire Size	245/70R17	245/70R17
Tire Size on Vehicle	245/70R17	245/70R17
Tire Manufacturer	Yokohama	Yokohama
Tire Model	Geolander X-CV	Geolander X-CV
Treadwear	520	520
Traction	A	A
Temperature Grade	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Nylon	2 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	110T	110T
Tire Material	Rubber	Rubber
DOT Safety Code Left	14UWXY 6LJ 0825	14UWXY 6LJ 0825
DOT Safety Code Right	14UWXY 6LJ 0825	14UWXY 6LJ 0825

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025

TEST VEHICLE TIRE PRESSURES

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

MDB TIRE SPECIFICATIONS

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

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	507.5	483.5		543.5	559.0		545.5	571.0	
Right	kg	520.0	502.5		526.0	567.5		513.5	572.5	
Ratio	%	51.0%	49.0%		48.7%	51.3%		48.1%	51.9%	
Totals	kg	1027.5	986.0	2013.5	1069.5	1126.5	2196.0	1059.0	1143.5	2202.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2013.5	(A)
Sum of Actual Weight of 2 P572 ATDs Used	kg	129	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	60	(C)
Calculated Test Vehicle Target Weight (TVTW)	kg	2202.5	(A+B+C)

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

TEST VEHICLE ATTITUDES AND CG

	Units	Fully Loaded	As Tested	Meets Requirement*
Left Front	mm	874	864	Yes
Right Front	mm	873	867	Yes
Right Rear	mm	896	902	Yes
Left Rear	mm	893	883	Yes
Vehicle CG (Aft of Front Axle)	mm	1482	1464	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	12	3	

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

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

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
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WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Units	Weight
Weight of Ballast Added	kg	12
Components Removed: none	kg	

TEST SURFACE MARKINGS

	Units	Distance from 63° Impact Angle Line
Fore 25 mm Target	mm	970
Aft 25 mm Target	mm	983
Pre-Impact Angle Line	mm	100

Parallel Track Target	Units	X Location	Y Location
A	mm	0	0
B	mm	1520	3085
C	mm		
D	mm	3500	0

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	18.8	13.8	16.3
Front Passenger Seat	17.0	12.2	14.6
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	16.3	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Passenger Seat	14.6	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

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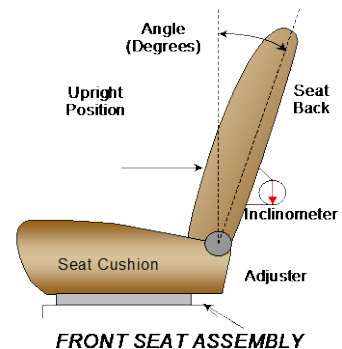
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SEAT FORE/AFT POSITIONS

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	120	12
Front Passenger Seat	240	25	120	12
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 to the manufacturer's designated design angle. 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 seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as 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	52.2	28	4.1	5
Front Passenger Seat	51.9	28	3.9	5
Front Center Seat				
Struck Side Rear Seat	28.0	15	-5.4	0
Non-Struck Side Rear Seat	27.6	15	-5.5	0
Rear Center Seat	28	15	-5.4	0

Seat back angles measured on outboard headrest post.

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

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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)
Rear Seat	Fixed	

HEAD RESTRAINT ADJUSTMENT

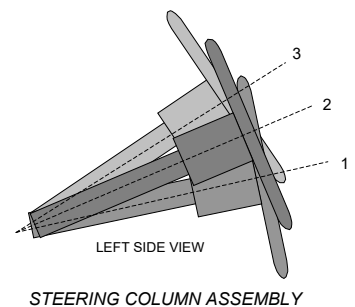
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	3	2 (Lowest as 0) / Fixed Fore-Aft
Rear Seat	2	0 (Lowest as 0) / Fixed Fore-Aft

STEERING COLUMN ADJUSTMENT

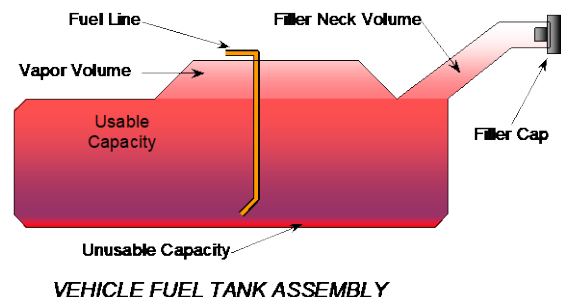
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of its geometric locus it describes when it moves through its full range of motion.

	Wheel Angle (°)	Fore/Aft Position (mm)
Lowermost, Position 1	72.4	
Geometric Center, Position 2	70.4	
Uppermost, Position 3	68.4	
Telescoping Steering Wheel Travel		57
Test Position	70.4	29



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.



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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
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FUEL TANK CAPACITY DATA

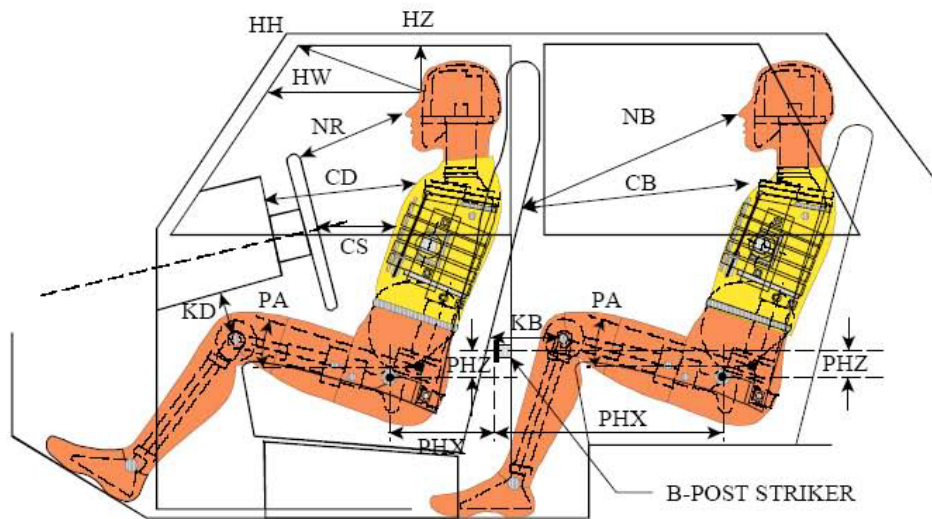
	Liters
Usable Capacity of Standard Tank (see S1 - Vehicle Setup Information)	72.0
Usable Capacity of Optional Tank (see S1 - Vehicle Setup Information)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	72.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	67.0
Actual Amount of Solvent Used	67.0
1/3 of Usable Capacity	24.0

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 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025



LEFT SIDE VIEW

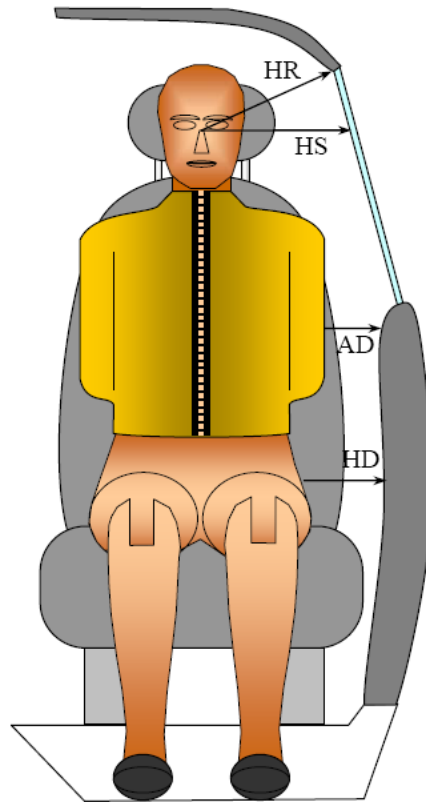
NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C-POST
STRIKER AS A REFERENCE POINT

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	485	10.4		
HW		Head to Windshield	654	0		
HZ	HZ	Head to Roof Liner	156	90	240	90
NR	NB	Nose to Rim/Seat Back	461	16.8	452	1.9
CD	CB	Chest to Dashboard/Seat Back	577	6.6	457	7.3
CS		Chest to Steering Wheel	376	12.5		
KDL	KBL	Left Knee to Dash/Seat Back	175	49.8	240	14.1
KDR	KBR	Right Knee to Dash/Seat Back	177	49.8	242	15.6
PAX	PAX	Pelvic Tilt Angle X		25.0		23.2
PAY	PAY	Pelvic Tilt Angle Y		-0.8		-0.4
PHX	PHX	Hip Point to Striker (X-Axis)	207		299	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	165		187	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025

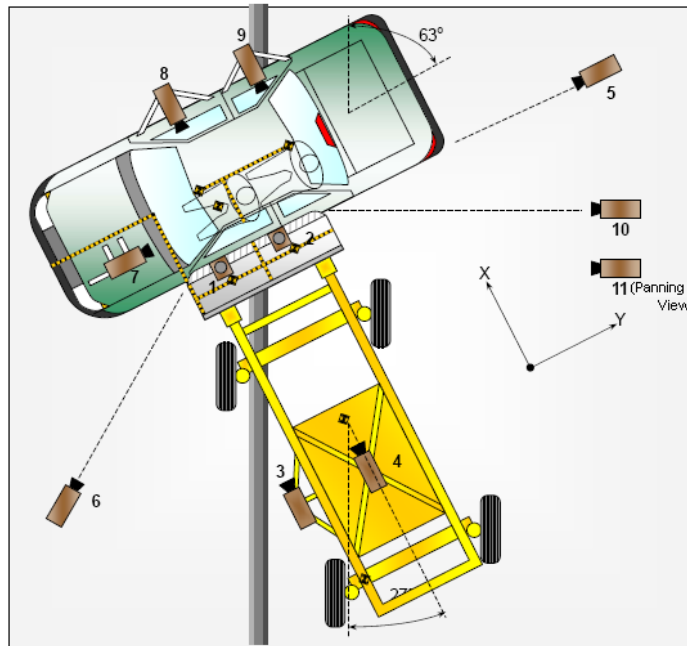


Code	Measurement Description	Driver	Passenger
		Length (mm)	
HR	Head to Side Header	199	242
HS	Head to Side Window	313	348
AD	Arm to Door	79	125
HD	Hip Point to Door	155	180

DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates* (mm)			Lens (mm)	Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	630	525	-4995	8.5	1000
2	Overhead Close-Up	0	0	-4895	20	1000
3	Left Impact Point (MDB)				50	1000
4	Side Overall (MDB)				16	1000
5	Rear	-40	7585	-1500	24	1000
6	Left Front	-1405	-4805	-1490	24	1000
7	Driver Front (OB)				16	1000
8	Driver Side (OB)				8	1000
9	Passenger Side (OB)				8	1000
10	Real Time Left Rear					30
11	Real Time Inrun					30

Reference: Impact Point projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

*All measurements accurate to ± 6 mm

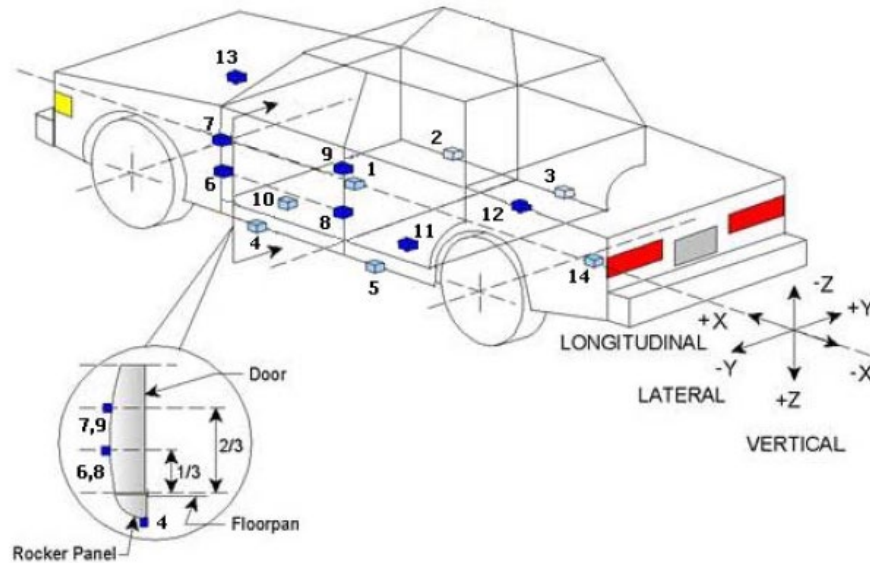
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Passenger Dummy	19
Vehicle Structure	23
MDB Accelerometers	5
Total	63

DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025



TEST VEHICLE ACCELEROMETER LOCATIONS

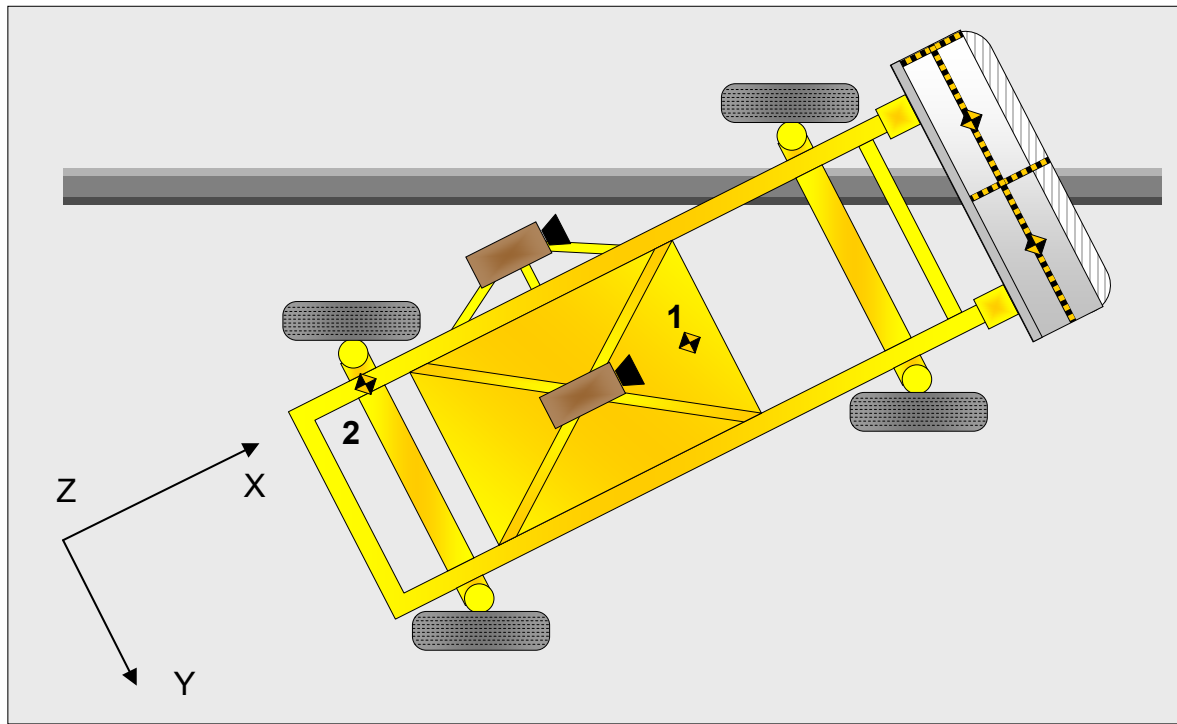
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2509	9	-637
2	Right Sill at Front Seat	2747	772	-376
3	Right Sill at Rear Seat	1861	770	-383
4	Left Sill at Front Door	2745	-780	-369
5	Left Sill at Rear Door	1854	-772	-374
6	Left Lower A-Post	3359	-859	-680
7	Left Middle A-Post	3379	-855	-979
8	Left Lower B-Post	2228	-750	-705
9	Left Middle B-Post	2216	-741	-903
10	Front Seat Track	2385	-404	-559
11	Rear Seat Structure	2011	-371	-581
12	Rt. Rear Occ. Compartment	2019	389	-580
13	Engine Block	4155	-4	-1113
14	Rear Above Axle	1071	-8	-714

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

DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025



MDB ACCELEROMETER LOCATIONS

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

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

Width between left and right MDB contact switches	mm	1397
---	----	------

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	None	Curtain Airbag
Top of Head	Headliner	Curtain Airbag, Headliner
Left Side of Head	Curtain Airbag	Curtain Airbag, Headliner
Back of Head	Curtain Airbag, Headliner, Headrest	Curtain Airbag, Headliner, Headrest, Seatback
Left Shoulder	None	Curtain Airbag
Upper Torso	Side Torso/Pelvis Airbag, Seatback	None
Lower Torso	Side Torso/Pelvis Airbag, Seatback	Door Panel
Left Hip	Side Torso/Pelvis Airbag	Door Panel
Left Knee	Door Panel	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	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)					

POST-TEST SEAT PERFORMANCE

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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Side Window Damage	LR window broken
Other Notable Effects	RR tire dislodged from rim

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025

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	No	
Side Airbag (Other)				
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes		Yes	
Other:				

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheelbase	mm		2854
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		487
Actual Impact Point (Aft of Front Axle)	mm		496
Horizontal Offset (+forward / -rearward)	mm	+/- 50 of intended impact point	-9
Vertical Offset (+down / -up)	mm	+/- 20 of intended impact point	-1

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Face	4119
Wheelbase of Framework Carriage	2588
CG Location aft of Front Axle	1125

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	393.4	297.1	
Right	kg	378.0	295.8	
Ratio	%	56.5	43.5	
Totals	kg	771.4	592.9	1364.4

Note: Total MDB weight does not equal the sum of the Front Axle and Rear Axle weights due to rounding of individual values.

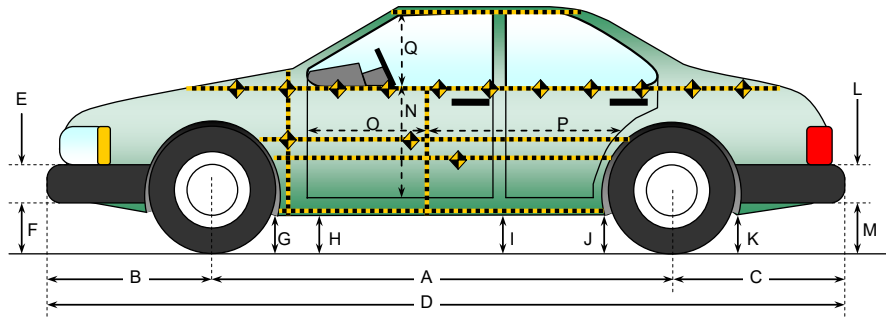
SPEED AND ANGLE AT IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.11
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.22
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.8
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	26.7

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
Test Date: 8/6/2025



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

LEFT SIDE VIEW

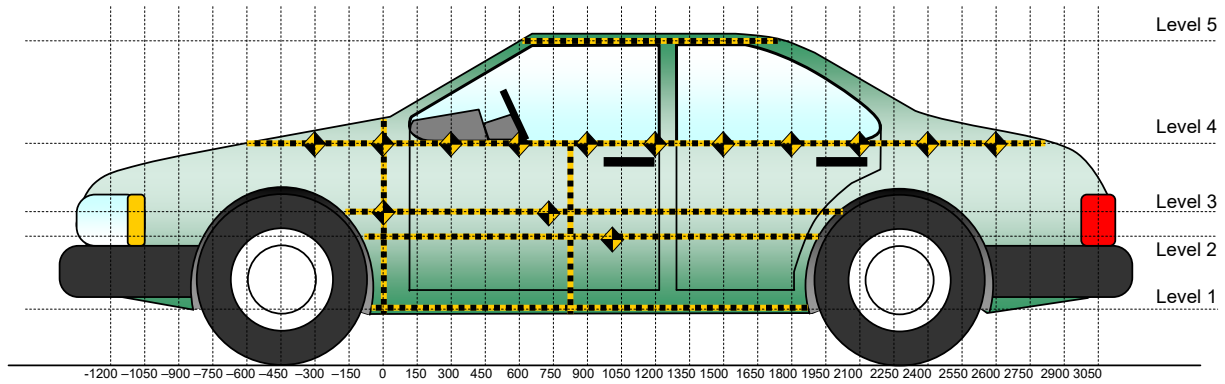
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Change
A	Wheelbase	2854	2848	-6
B	Front Axle to FSOV	892	897	5
C	Rear Axle to RSOV	1172	1170	-2
D	Total Length at Centerline	4918	4915	-3
E	Front Bumper Thickness	95	95	0
F	Front Bumper Bottom to Ground	490	518	28
G	Sill Height at Front Wheel Well	338	344	6
H	Sill Height at Front Door Leading Edge	361	358	-3
I	Sill Height at B Pillar	368	344	-24
J1	Sill Height at Rear Wheel Well	378	320	-58
J2	Pinch Weld Height at Rear Wheel Well	373	346	-27
K	Sill Height Aft of Rear Wheel Well	188	147	-41
L	Rear Bumper Thickness	204	203	-1
M	Rear Bumper Bottom to Ground	438	370	-68
N	Sill Height to Window Bottom Sill	762	756	-6
O	Front Door Leading Edge to Impact CL	786	794	8
P	Rear Door Trailing Edge to Impact CL	1013	1009	-4
Q	Front Window Opening	471	475	4
R	Right Side Length	4312	4317	5
S	Left Side Length	4313	4295	-18
T	Vehicle Width at B Post	1830	1752	-78
U	Front Wheel Track Width	1690		
V	Rear Wheel Track Width	1690		

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025



All Measurements Shown in mm

LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEAUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	413	81	1800
2	Mid Door	774	130	1650
3	Occupant H-Point	820	129	1800
4	Window Sill	1170	41	1350
5	Window Top	1720	2	1200

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

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025

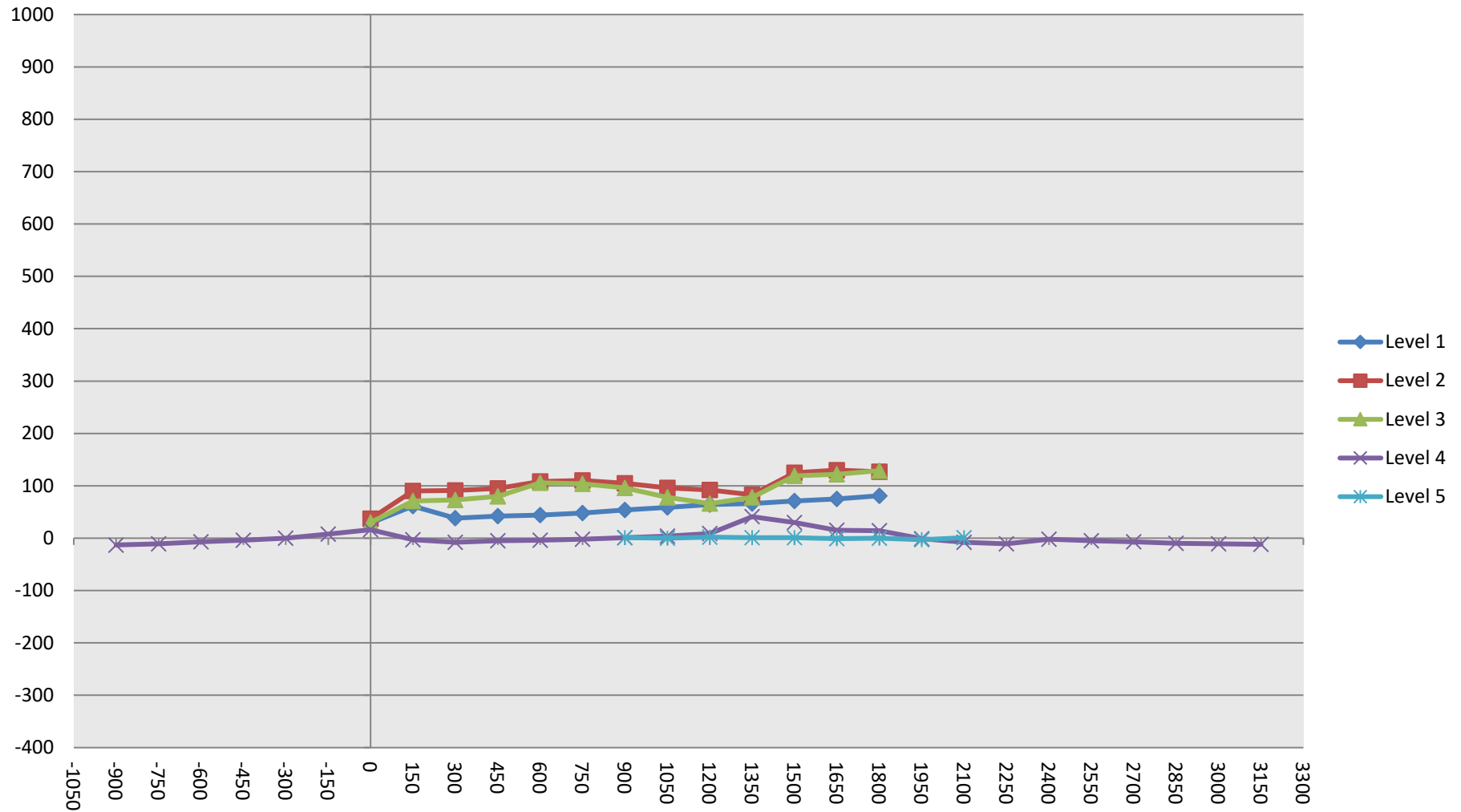
	Pre-Test					Post-Test					Exterior Crush				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-2100															
-1950															
-1800															
-1650															
-1500															
-1350															
-1200															
-1050															
-900				823					836					-13	
-750				839					850					-11	
-600				850					857					-7	
-450				862					866					-4	
-300				869					869					0	
-150				871					863					8	
0	964	988	982	873		935	951	952	857		29	37	30	16	
150	896	949	949	867		835	859	878	870		61	90	71	-3	
300	852	924	925	848		814	833	852	856		38	91	73	-8	
450	852	910	912	849		810	815	832	854		42	95	80	-5	
600	851	907	911	856		807	799	805	860		44	108	106	-4	
750	850	908	912	860		802	798	808	862		48	110	104	-2	
900	851	909	913	864	621	797	804	817	863	620	54	105	96	1	1
1050	850	910	914	867	635	791	814	836	863	635	59	96	78	4	0
1200	850	911	916	871	642	786	819	850	862	640	64	92	66	9	2
1350	847	911	915	872	645	781	828	837	831	644	66	83	78	41	1
1500	845	909	914	874	646	774	784	795	844	645	71	125	119	30	1
1650	840	916	920	875	647	765	786	798	860	648	75	130	122	15	-1
1800	868	952	955	881	647	787	825	826	867	647	81	127	129	14	0
1950		991	993	896	645				897	648				-1	-3
2100				912	643				920	642				-8	1
2250				919					930					-11	
2400				922					924					-2	
2550				921					926					-5	
2700				919					926					-7	
2850				910					920					-10	
3000				889					900					-11	
3150				861					873					-12	
3300															
3450															
3600															
3750															
3900															

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

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
Test Program: NCAP Side MDB Impact Test

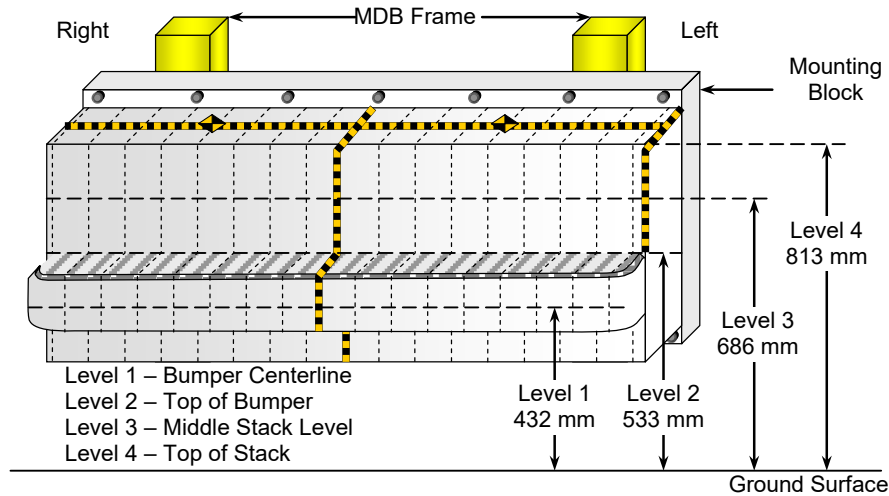
NHTSA No.: M20255104
Test Date: 8/6/2025



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025



FRONT VIEW

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	700	Left	234
B	Top of Bumper	533	800	Left	222
C	Mid-Level	686	800	Left	192
D	Top of Stack	813	800	Left	212

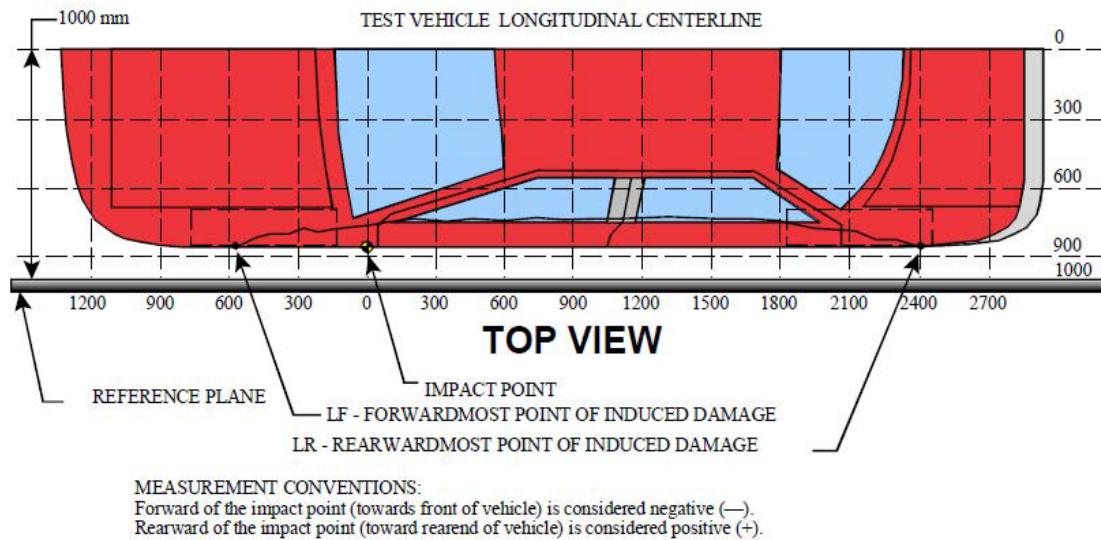
DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center (mm)								C _L	Distance Left of Center (mm)							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
4	163	128	114	121	160	158	145	137	128	133	129	109	120	130	137	165	212
3	151	138	125	118	145	159	146	138	128	119	112	107	105	109	115	146	192
2	186	193	196	190	179	166	206	209	208	207	211	210	212	213	216	220	222
1	194	197	200	203	206	209	211	214	215	217	219	221	224	226	229	234	234

DATA SHEET NO. 13
VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Max. Static Crush (mm)
1	1800	3	174	45	129
2	1478	3	204	86	118
3	1169	3	152	84	68
4	851	3	187	87	100
5	533	3	186	89	97
6	300	3	148	75	73

MDB DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Max. Static Crush (mm)
1	800 mm right of center	1	670	476	194
2	480 mm right of center	1	668	463	205
3	160 mm right of center	1	674	463	211
4	160 mm left of center	1	680	463	217
5	480 mm left of center	1	691	463	228
6	800 mm left of center	1	710	476	234

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

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

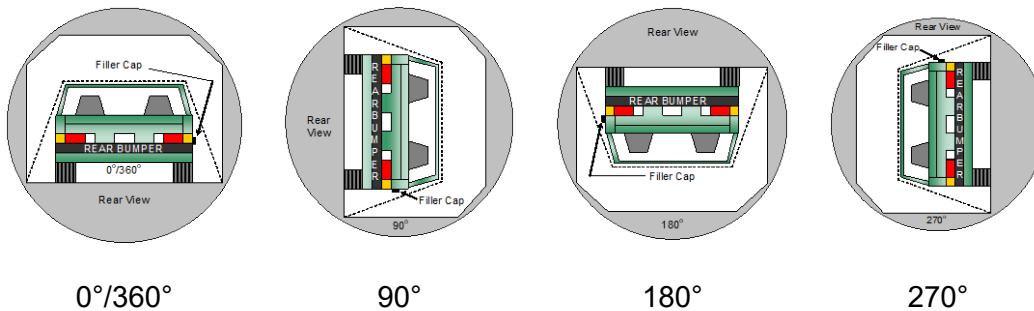
NHTSA No.: M20255104
 Test Date: 8/6/2025

Test Time: 11:35 am

Temperature: 21.7°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°	94	300	394
90° to 180°	90	300	390
180° to 270°	81	300	381
270° to 360°	87	300	387

FMVSS 301 ROLLOVER SPILLAGE TABLE (UNITS IN OUNCES)

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

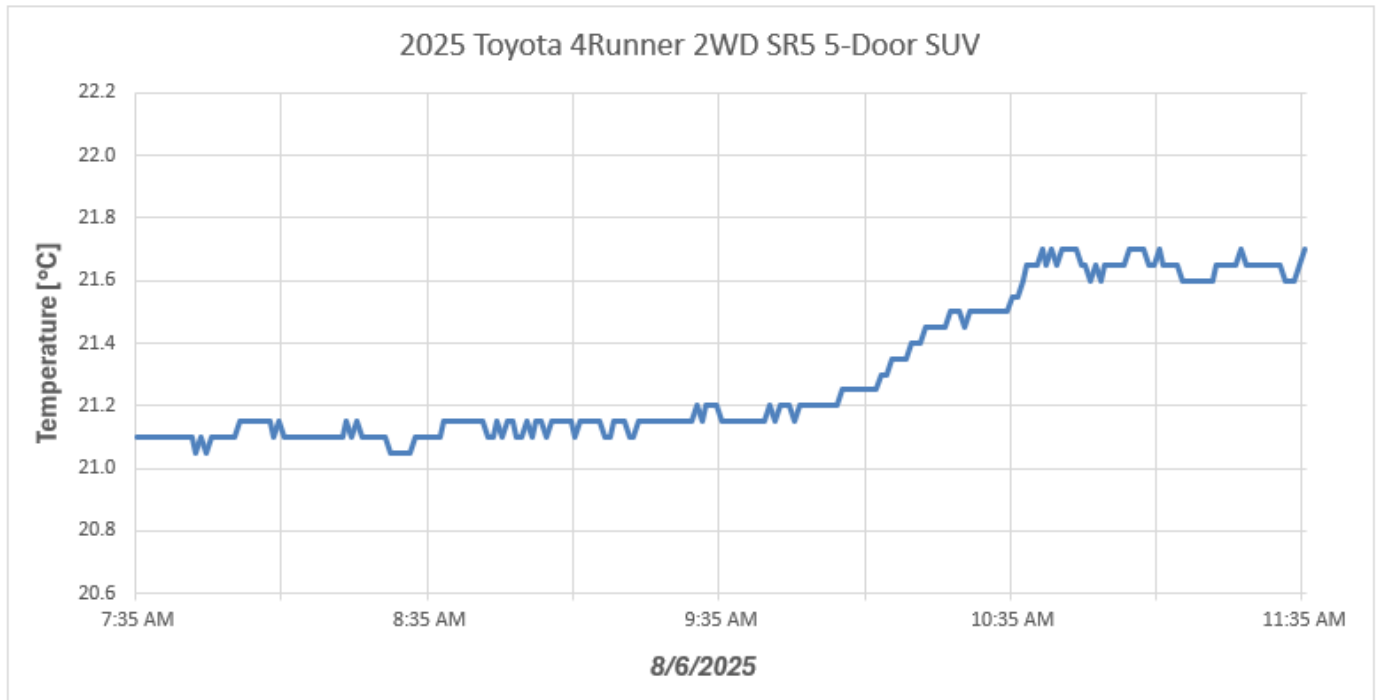
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 15
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2025 Toyota 4Runner 2WD SR5 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255104
 Test Date: 8/6/2025



Serial #	Description	Maximum	Average	Minimum	Units
W1443497	VSC North Hall - Temp (3016)	21.70	21.30	21.05	°C

APPENDIX A
PHOTOGRAPHS

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



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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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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

PHOTOGRAPH NOT APPLICABLE

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



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



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



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



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



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



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



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



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

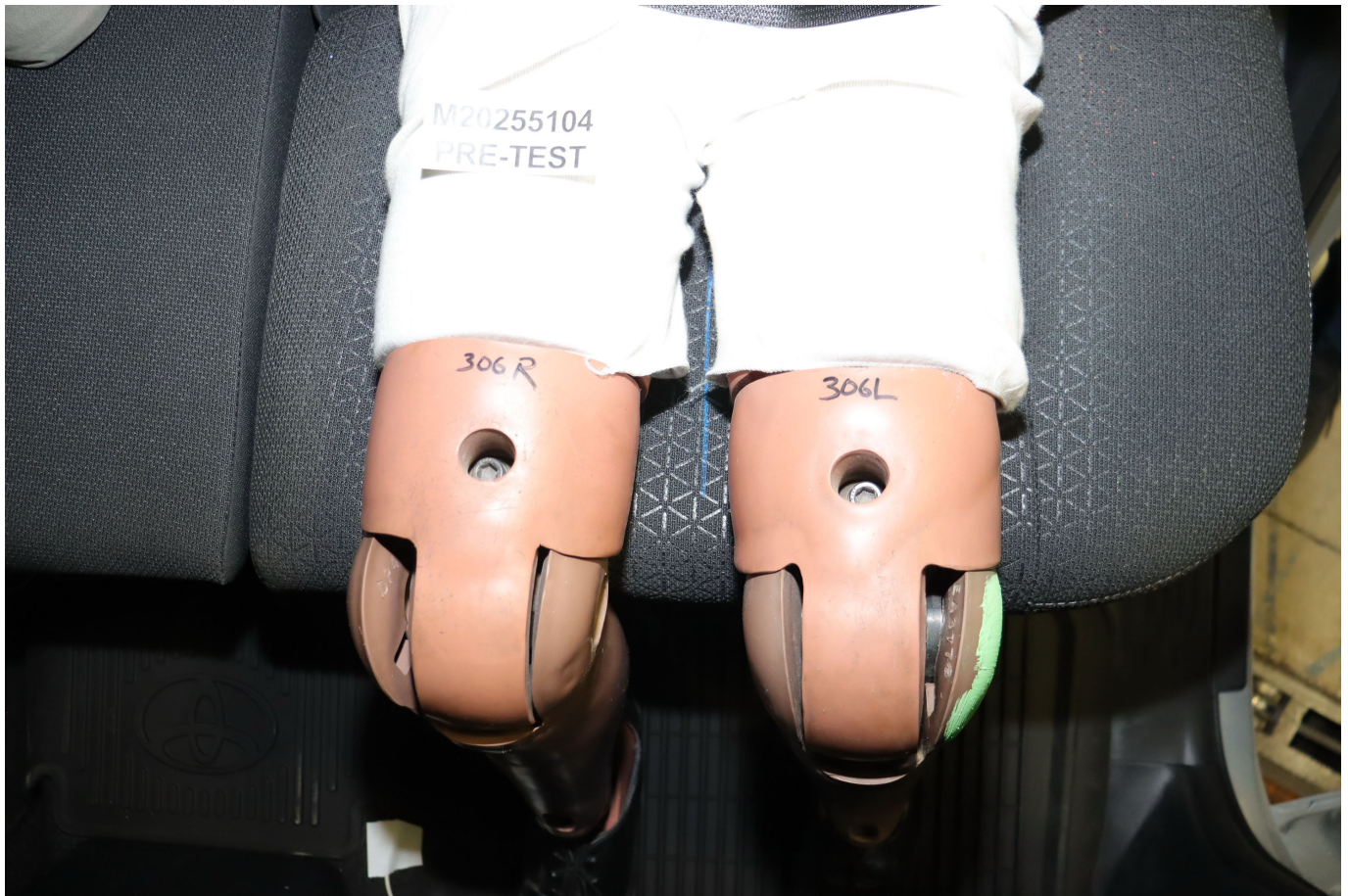


Photo No. 061 - Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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

PHOTOGRAPH NOT APPLICABLE

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



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

PHOTOGRAPH NOT APPLICABLE

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



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



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



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

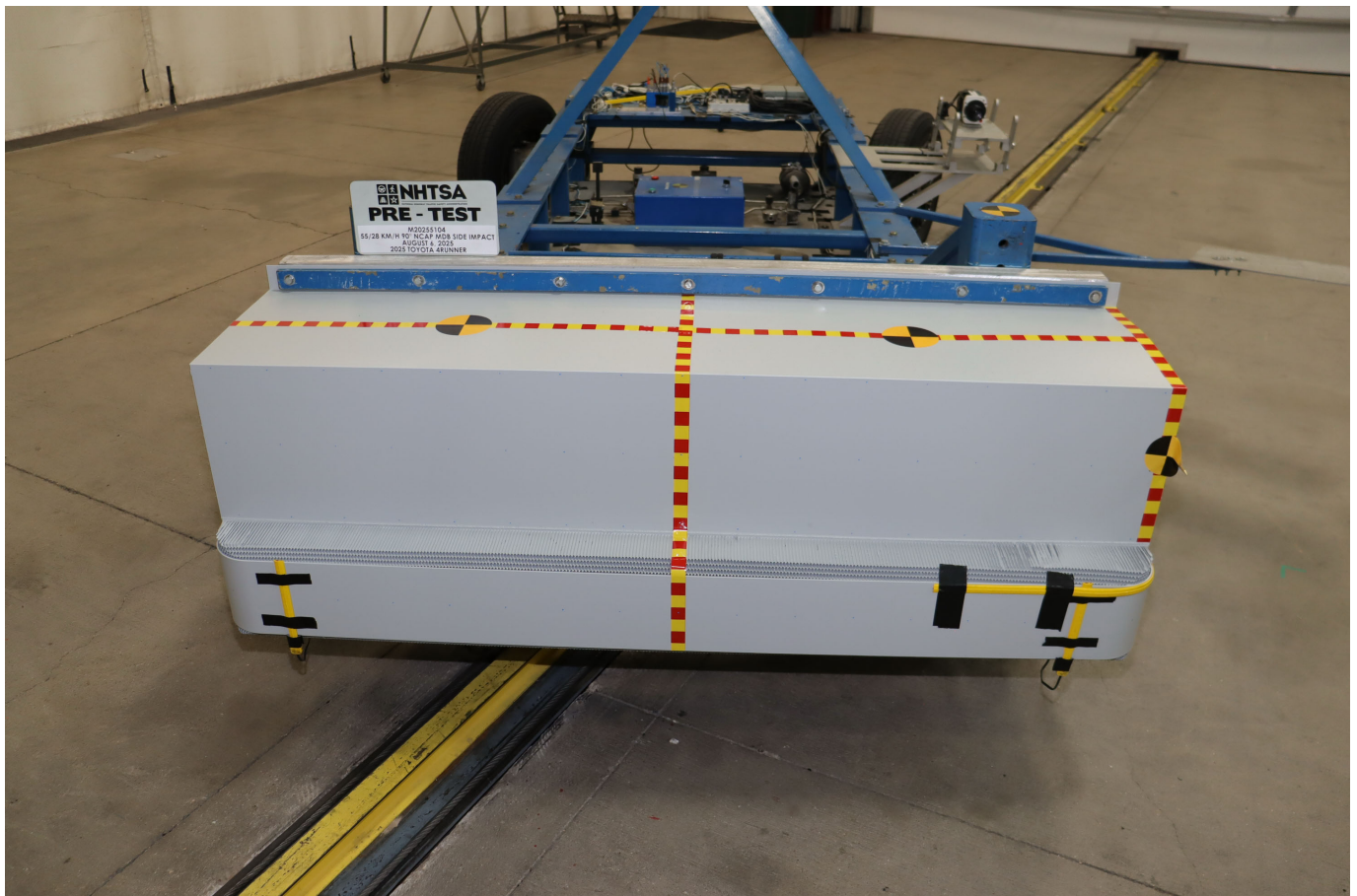


Photo No. 084 - Pre-Test Front View of MDB Impactor Face

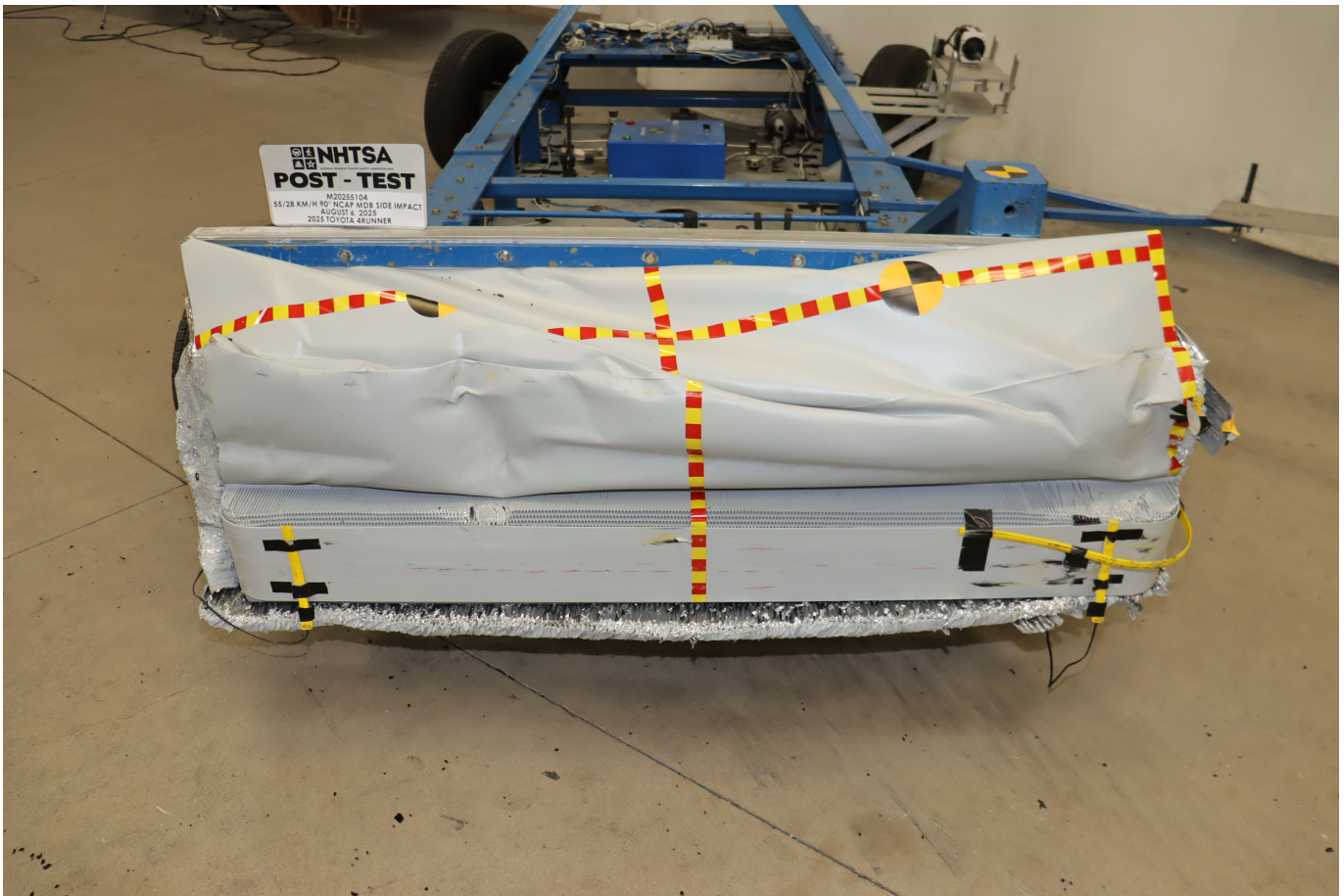


Photo No. 085 - Post-Test Front View of MDB Impactor Face

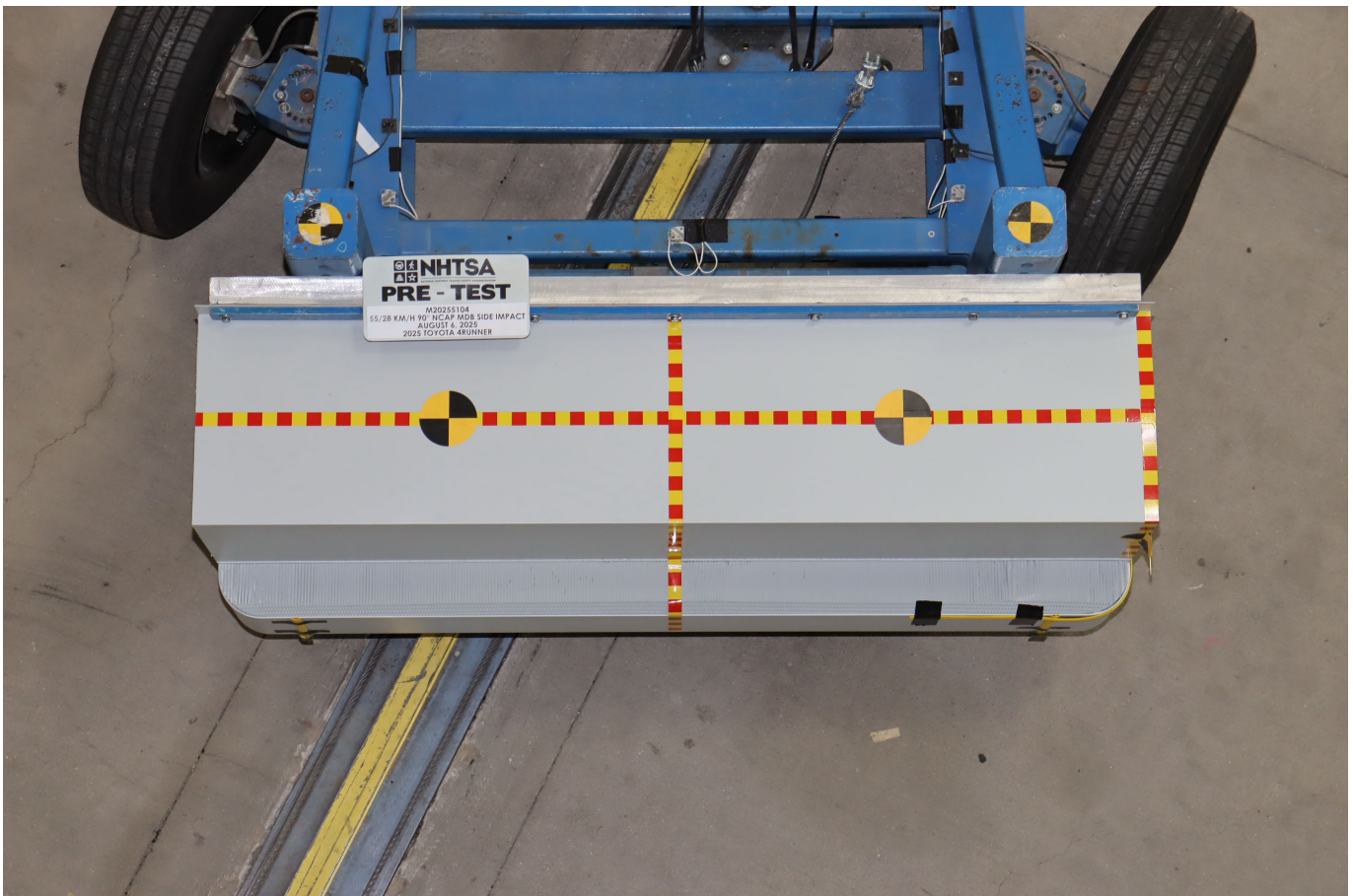


Photo No. 086 - Pre-Test Top View of MDB Impactor Face

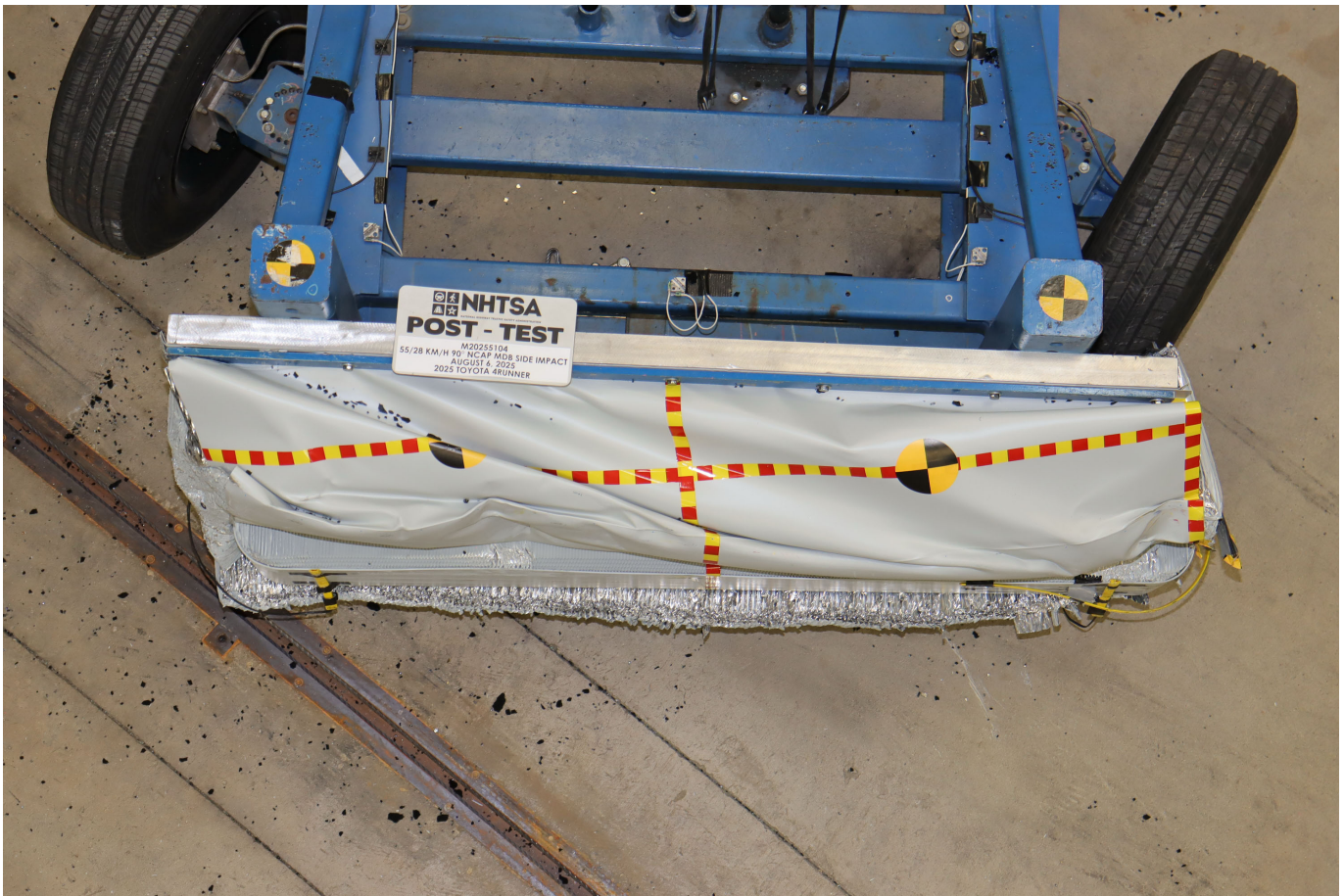


Photo No. 087 - Post-Test Top View of MDB Impactor Face



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



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



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



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



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



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



Photo No. 093a - Close-Up View of Vehicle Load Carrying Capacity Reduction Label



Photo No. 094 - Pre-Test Ballast View



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



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



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



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

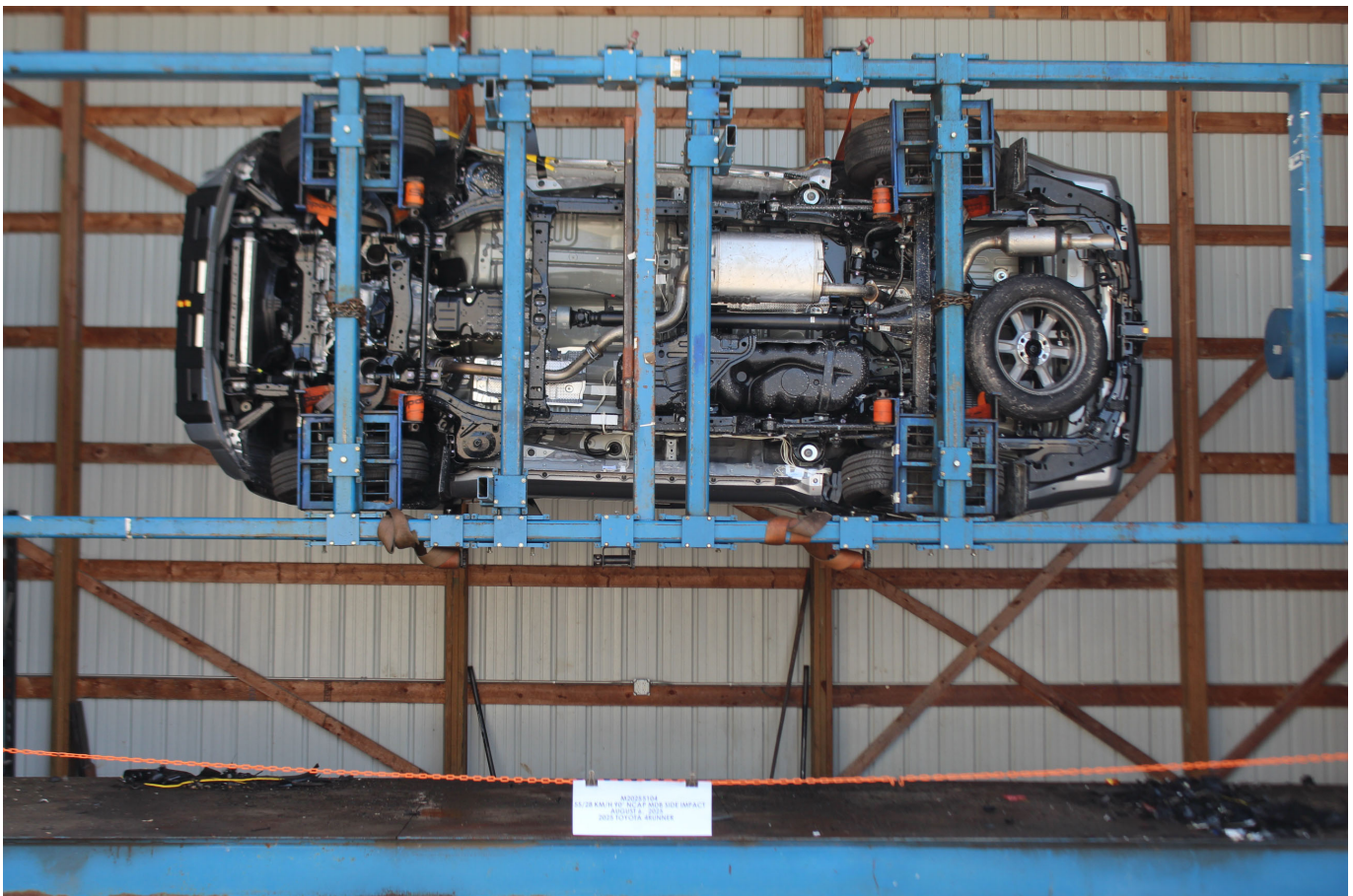


Photo No. 099 - FMVSS Photo No. 301 Static Rollover 270 Degrees



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



Photo No. 101 - Impact Event

TOYOTA

DESC.: **4RUNNER** **2WD SR5**
 VIN: **JTEVA5AR4S5004065**
 YR/MDL: 2025/8642A
 CLR: CUTTING EDGE/FA20 (01L0/20)
 FINAL ASSEMBLY POINT: TAHARA, AICHI, JAPAN

GOVERNMENT 5-STAR SAFETY RATINGS

This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.

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

- i-FORCE 2.4L 4cyl Turbocharged Engine
- 8-Spd Automatic Transmission
- Rear-Wheel Drive
- Tow Hitch Receiver w/7 & 4-Pin Connector

SAFETY & CONVENIENCE

- Toyota Safety Sense 3.0 w/Pre-Collision
- Connected Services Capable, 4G network dependent. See Toyota.com for details.
- Blind Spot Monitor (BSM) w/
- Rear Cross-Traffic Alert (RCTA)
- Smart Key System

EXTERIOR

- 17-in Alloy Wheels
- Power Rear Window
- LED Headlights and Fog Lights
- Black Roof Rails
- Temporary Spare Tire

INTERIOR

- 8-in. Toyota Audio Multimedia w/
- 8-Speakers, Wireless Apple CarPlay and Android Auto Compatibility
- SiriusXM w/3-Month Trial
- Fabric-Trimmed Seats w/
- Driver Lumbar Support
- Leather-trimmed steering wheel

- For Full Product Details, Please visit Toyota.com/4Runner

Full Tank of Gas

BASE MANUFACTURER'S SUGGESTED RETAIL PRICE		\$40,770.00
OPTIONAL EQUIPMENT		
FE	50 STATE EMISSIONS	
63	Floor Mats- All Weather- '4Runner'	248.00
MF	Mudguards- Fr +Rr Molded Black '4Runner'	160.00

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy

22 MPG
 combined city/hwy
 4.5 gallons per 100 miles

Standard SUVs range from 11 to 100 MPG.
 The best vehicle rates 140 MPG.

You spend \$2,500 more in fuel costs over 5 years
 compared to the average new vehicle.

Annual fuel cost \$2,400

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

1 5 10 Best

This vehicle emits 399 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions; learn more at fueleconomy.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 \$3,500 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.

fueleconomy.gov
 Calculate personalized estimates and compare vehicles

Smartphone QR Code

MANUFACTURER'S SUGGESTED RETAIL PRICE*	\$41,178.00
DELIVERY, PROCESSING AND HANDLING FEE	1,450.00
TOTAL SUGGESTED RETAIL PRICE	\$42,628.00

Delivered by Truck to 48067
 KENOSHA TOYOTA
 8180 120TH AVENUE
 KENOSHA WI 53142



TMLIENIS0FW0

Photo No. 102 - Monroney Label

158 3-3. Adjusting the seats

WARNING

- After returning the third seat to its original position
- Gently shake the third seat to the front and rear and check that it is secure.
- Do not pinch the seat belt.
- Make sure that the seat belt is removed from the hanger as before.

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.
- Vehicles with third seat: When sitting on the third seat, make sure that the head restraint is not folded.

Adjusting a head restraint

Front seats and outboard second seats

1 Up

3-3. Adjusting the seats 159

Pull the head restraints up.
2 Down
 Push the head restraint down while pressing the lock release button **A**.

Second center seat

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

Third seats (vehicle with third seats)

1 To use

Lift up the head restraint until it locks.
2 To fold
 Pull the strap **A** to fold the head restraint.

Adjusting the height of the head restraints (front seats and outboard second 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.

Adjusting the second center seat head restraint

Always raise the head restraint one level from the stowed position when using.

Removing the head restraints

Front seats and outboard second seats

Pull the head restraint up while pressing the lock release button **A**.

If the head restraint touches the ceiling, making the removal difficult, change the seat height or angle. (→P.151, 152)

Before driving

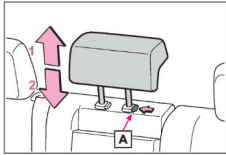
Photo No. 103 - Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Pull the head restraints up.

2 Down

Push the head restraint down while pressing the lock release button [A].

■ Second center seat



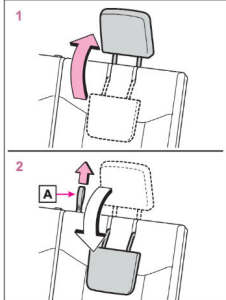
1 Up

Pull the head restraints up.

2 Down

Push the head restraint down while pressing the lock release button [A].

■ Third seats (vehicle with third seats)



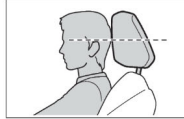
1 To use

Lift up the head restraint until it locks.

2 To fold

Pull the strap [A] to fold the head restraint.

■ Adjusting the height of the head restraints (front seats and outboard second 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.

■ Adjusting the second center seat head restraint

Always raise the head restraint one level from the stowed position when using.

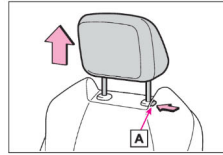
Removing the head restraints

■ Front seats and outboard second seats

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

If the head restraint touches the ceiling, making the removal difficult, change the seat height or angle. (→P.151, 152)

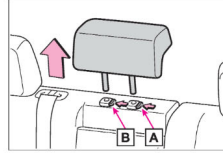
3 Before driving



■ Second center seat

Lift the head restraint while pressing both of the release buttons [A] and [B].

If the head restraint touches the ceiling, making the removal difficult, change the seat angle. (→P.152)



■ Third seats (if equipped)

The head restraint cannot be removed.

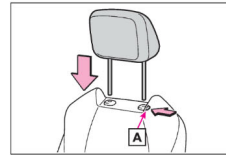
Installing the head restraints

■ Front seats and outboard second 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

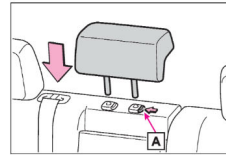
head restraint.



■ Second center seat

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.



APPENDIX B
DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

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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 & Passenger Dummy Instrumentation Data

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

Vehicle Instrumentation Data

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

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

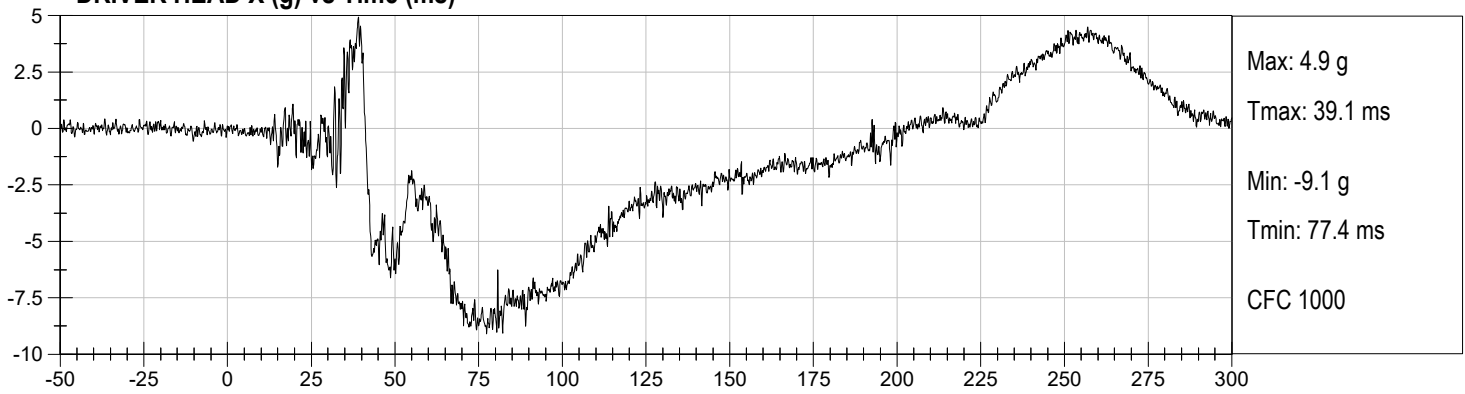
MDB Rear Acceleration (X)

MDB Rear Acceleration (Y)

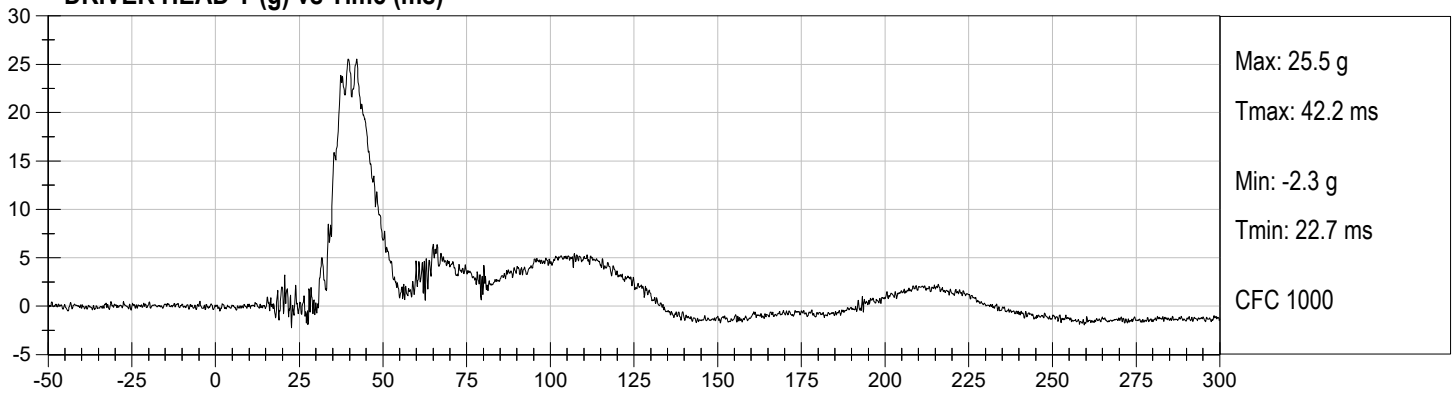
Left MDB Contact Switch

Right MDB Contact Switch

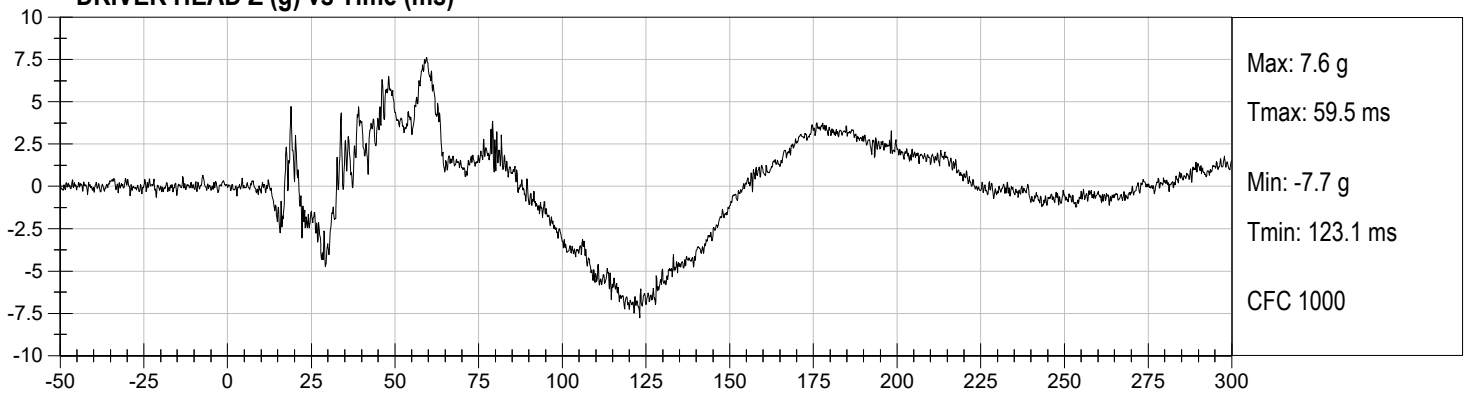
DRIVER HEAD X (g) vs Time (ms)



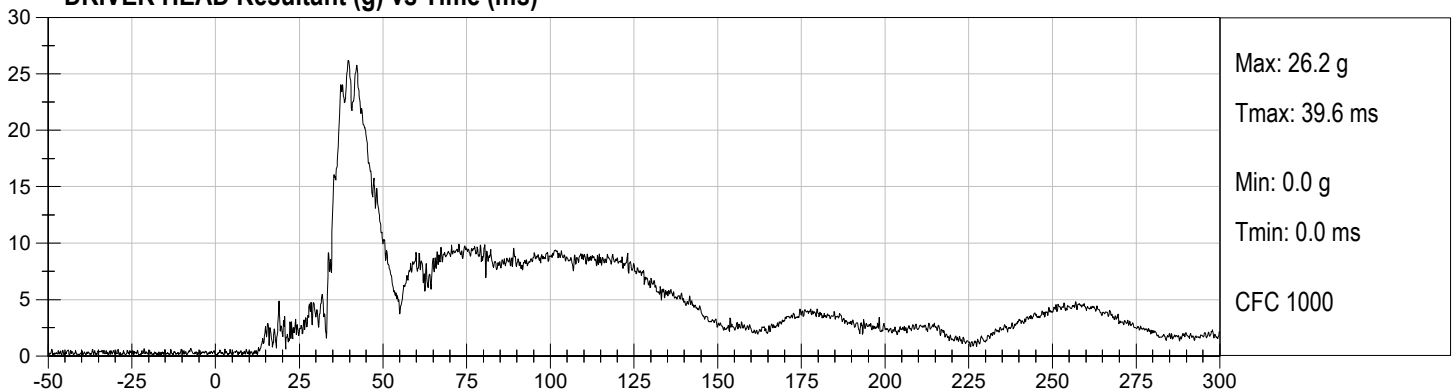
DRIVER HEAD Y (g) vs Time (ms)



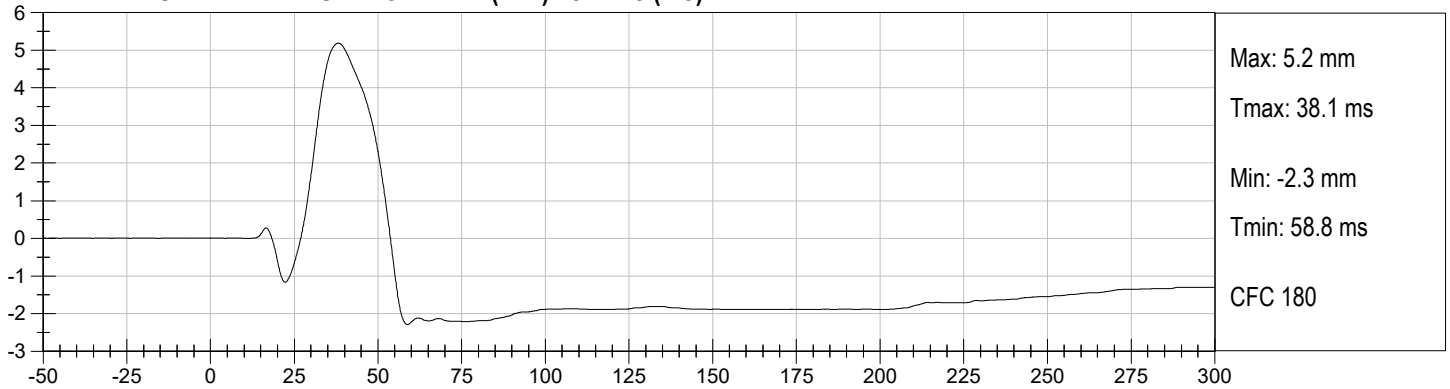
DRIVER HEAD Z (g) vs Time (ms)



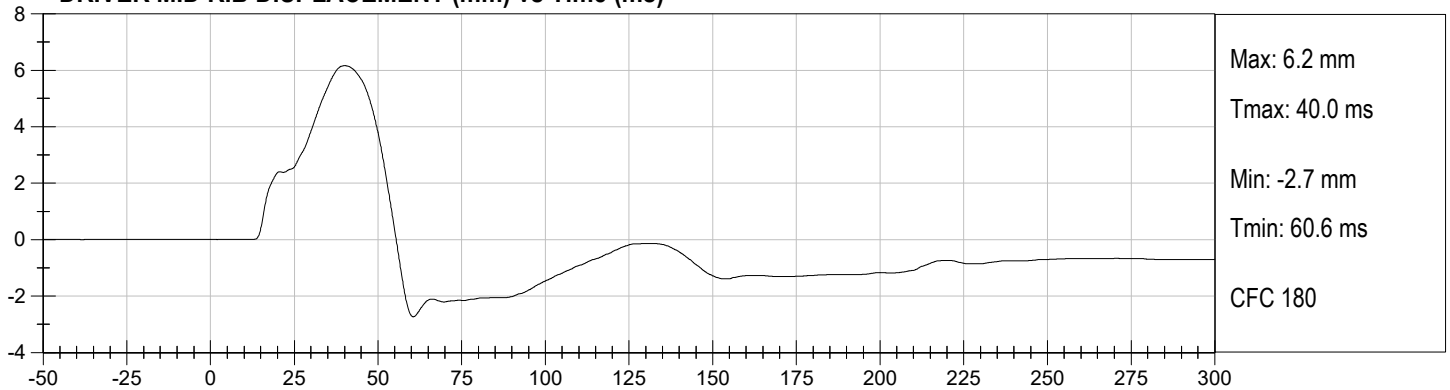
DRIVER HEAD Resultant (g) vs Time (ms)



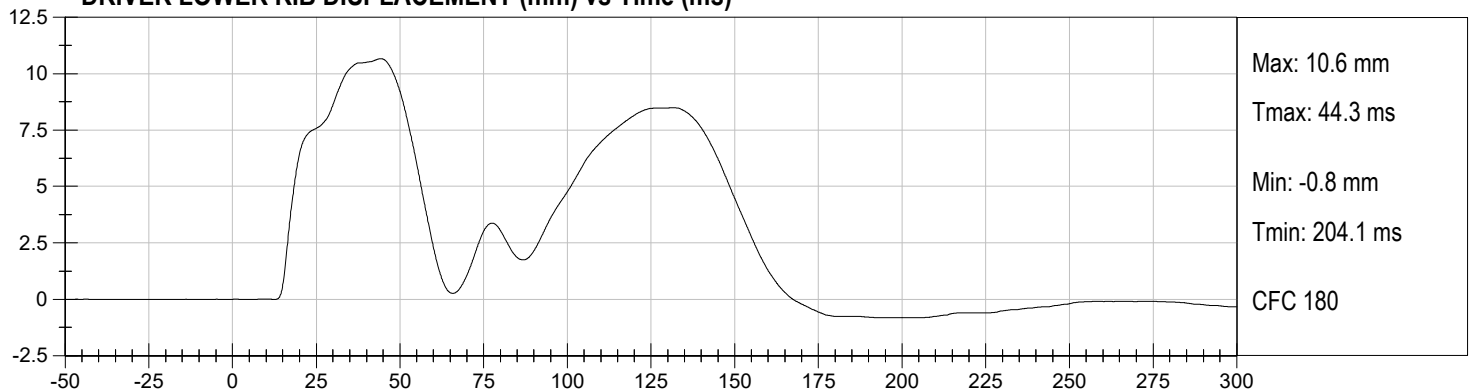
DRIVER UPPER RIB DISPLACEMENT (mm) vs Time (ms)



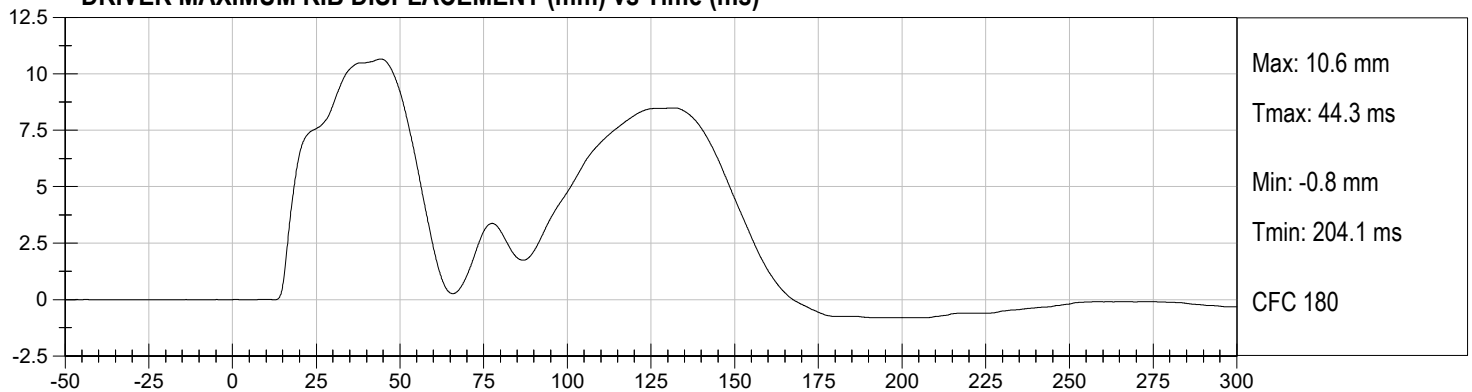
DRIVER MID RIB DISPLACEMENT (mm) vs Time (ms)



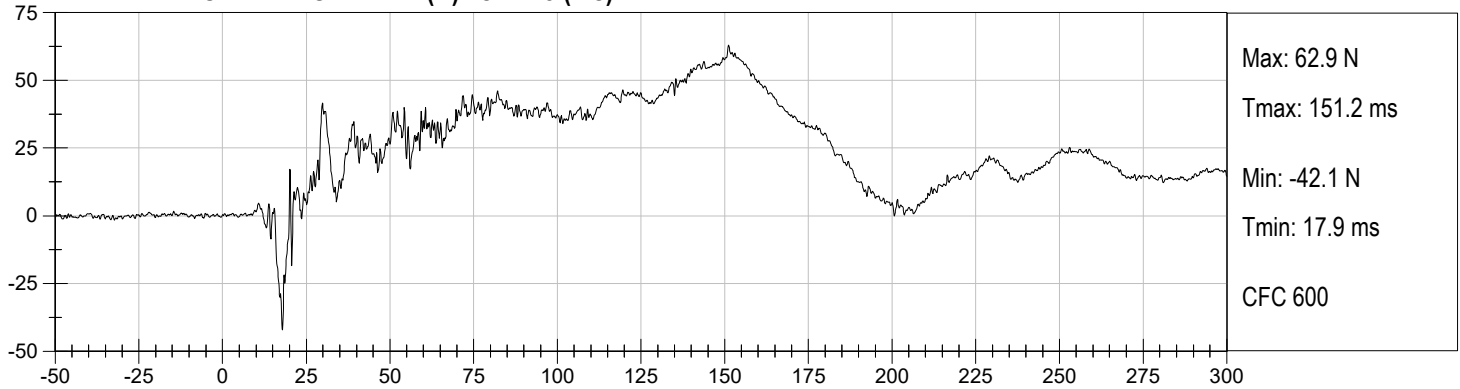
DRIVER LOWER RIB DISPLACEMENT (mm) vs Time (ms)



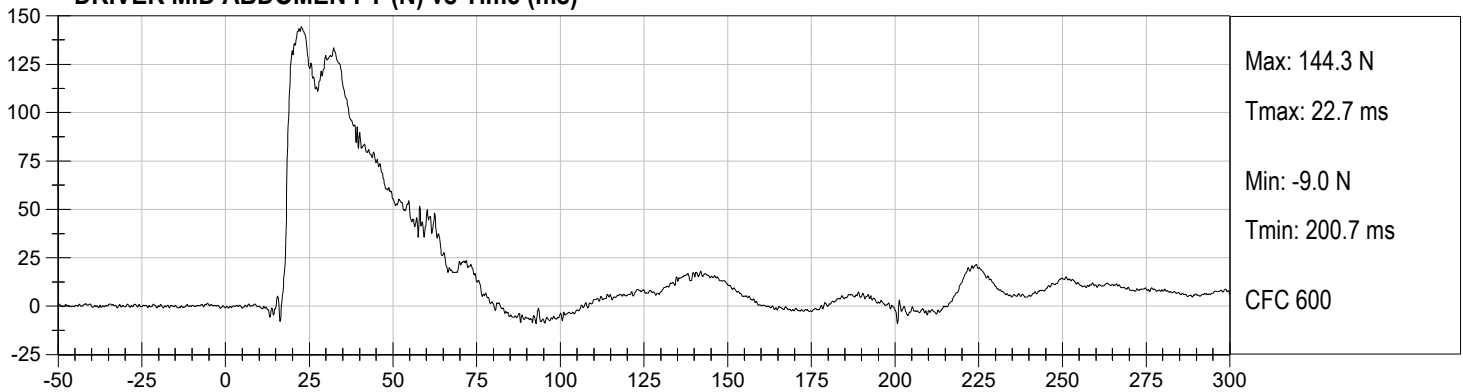
DRIVER MAXIMUM RIB DISPLACEMENT (mm) vs Time (ms)



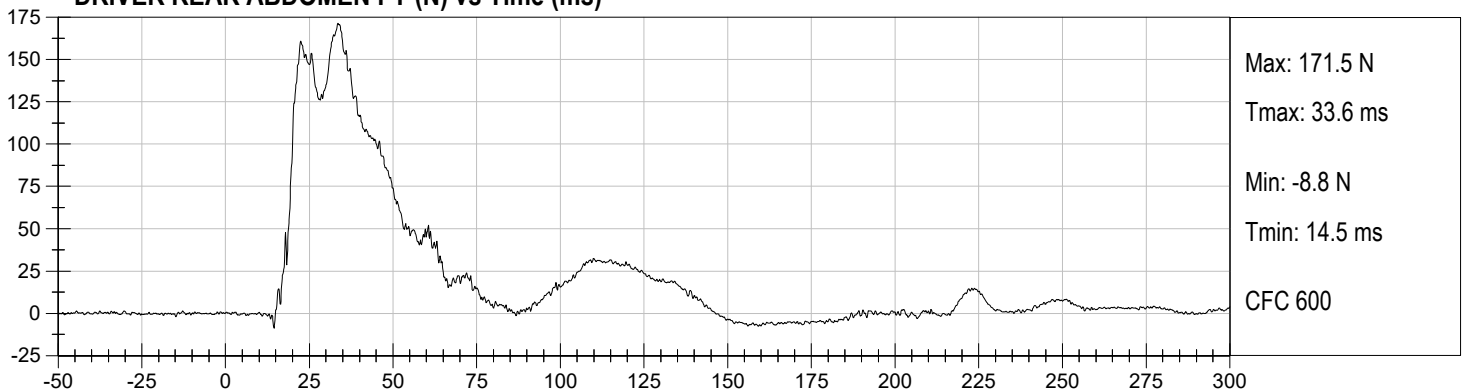
DRIVER FRONT ABDOMEN FY (N) vs Time (ms)



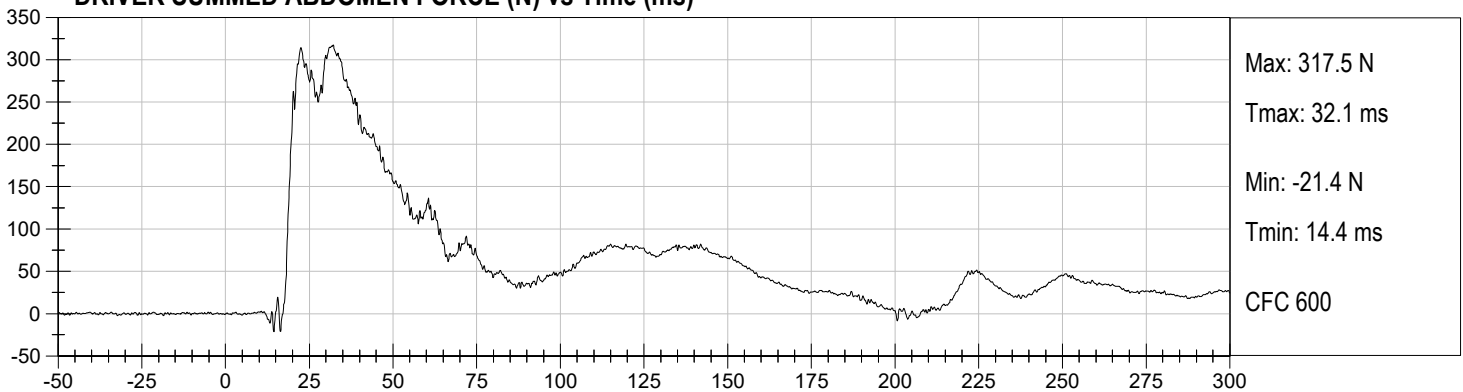
DRIVER MID ABDOMEN FY (N) vs Time (ms)

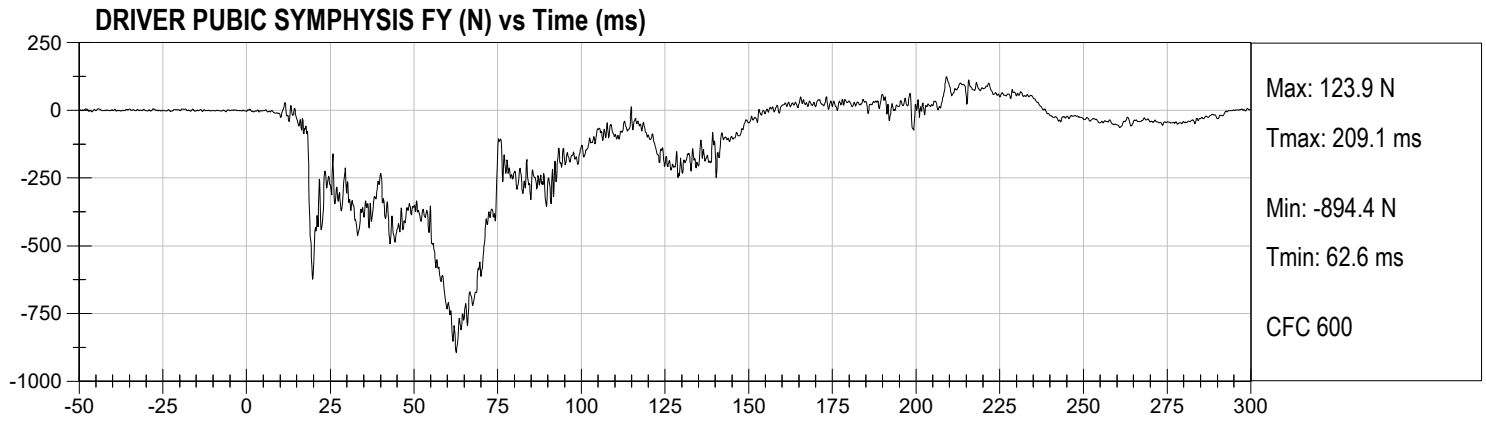


DRIVER REAR ABDOMEN FY (N) vs Time (ms)

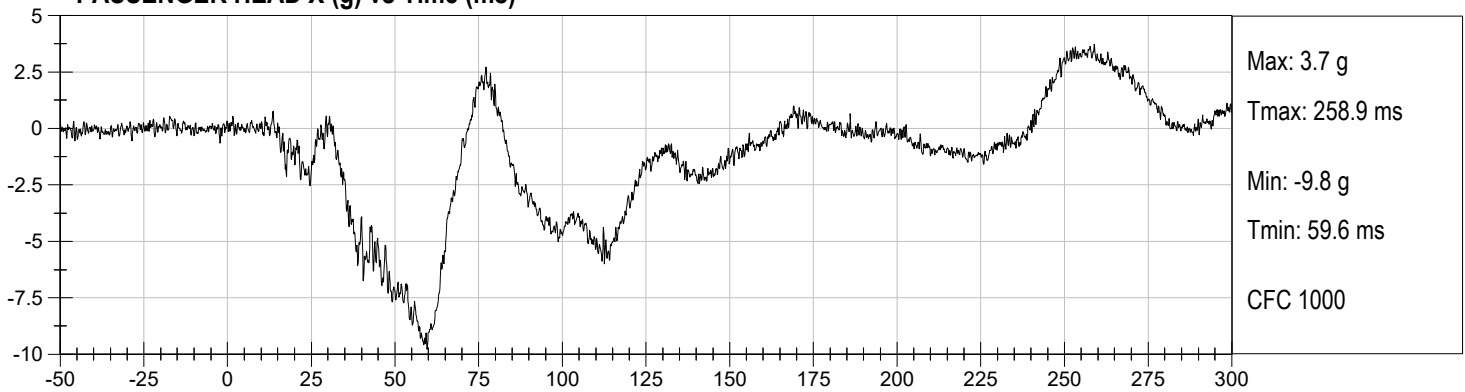


DRIVER SUMMED ABDOMEN FORCE (N) vs Time (ms)

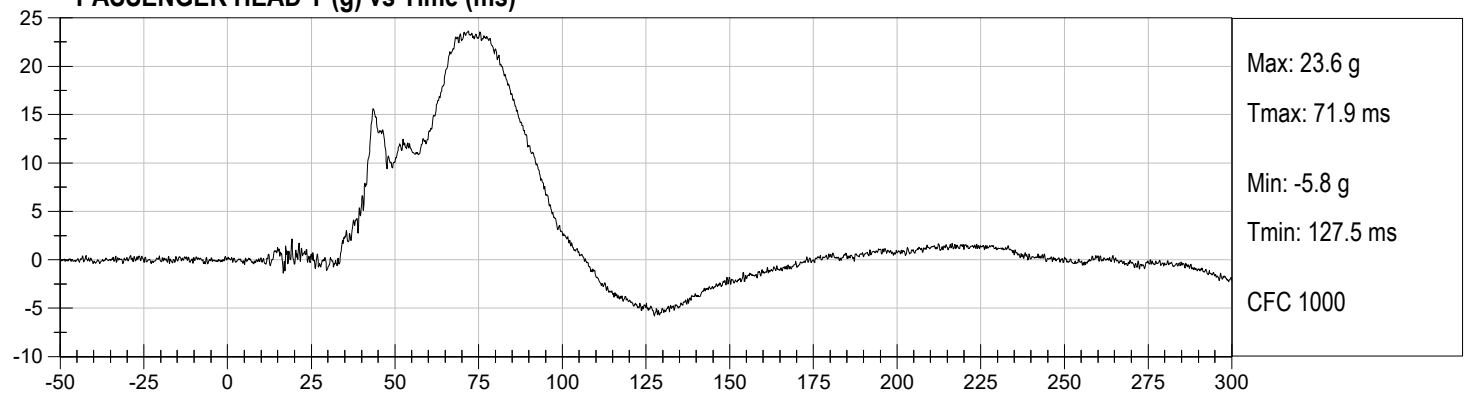




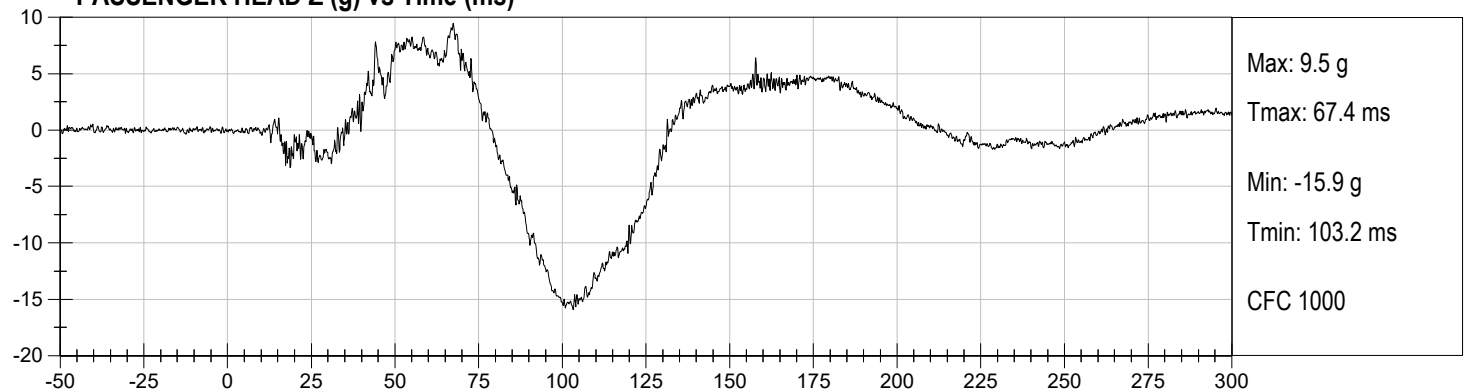
PASSENGER HEAD X (g) vs Time (ms)



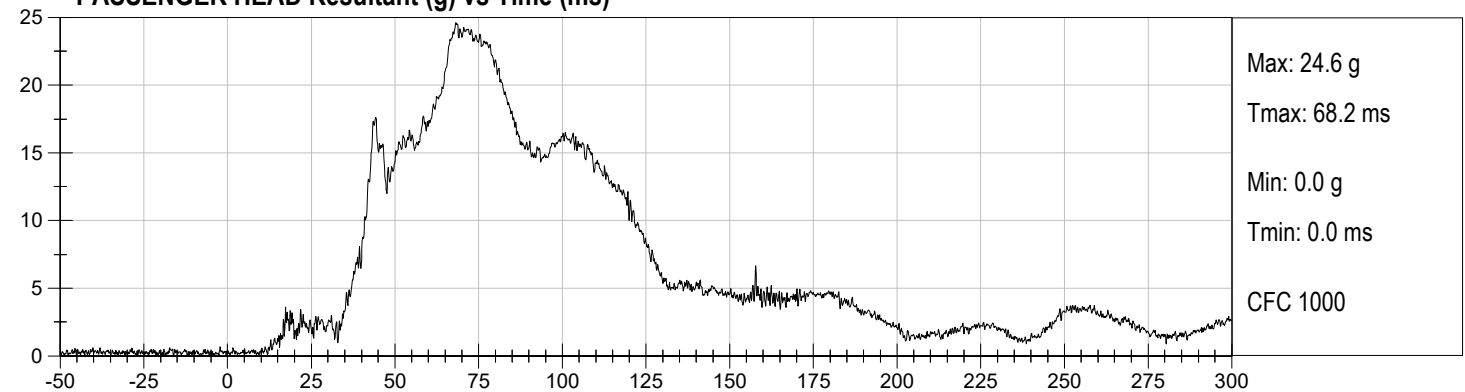
PASSENGER HEAD Y (g) vs Time (ms)



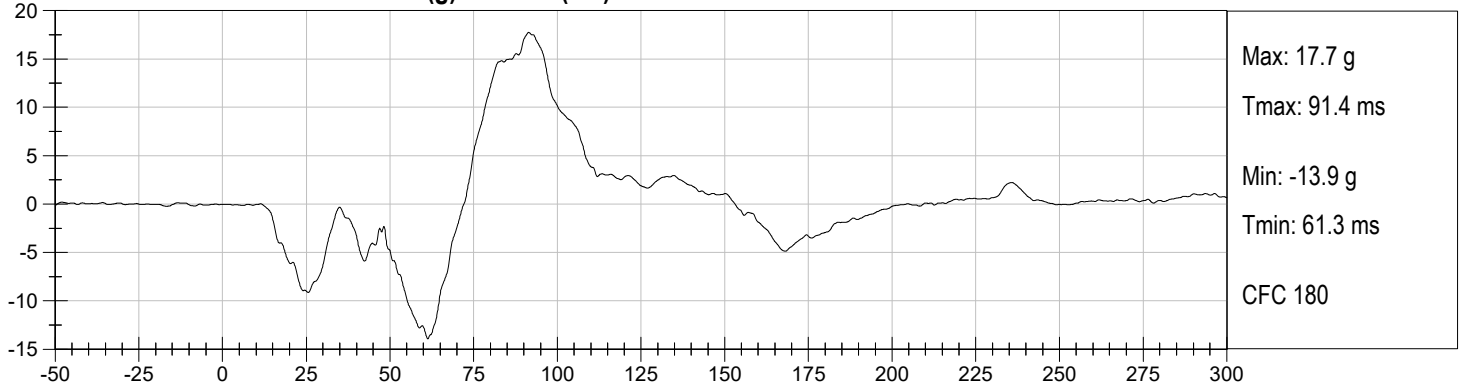
PASSENGER HEAD Z (g) vs Time (ms)



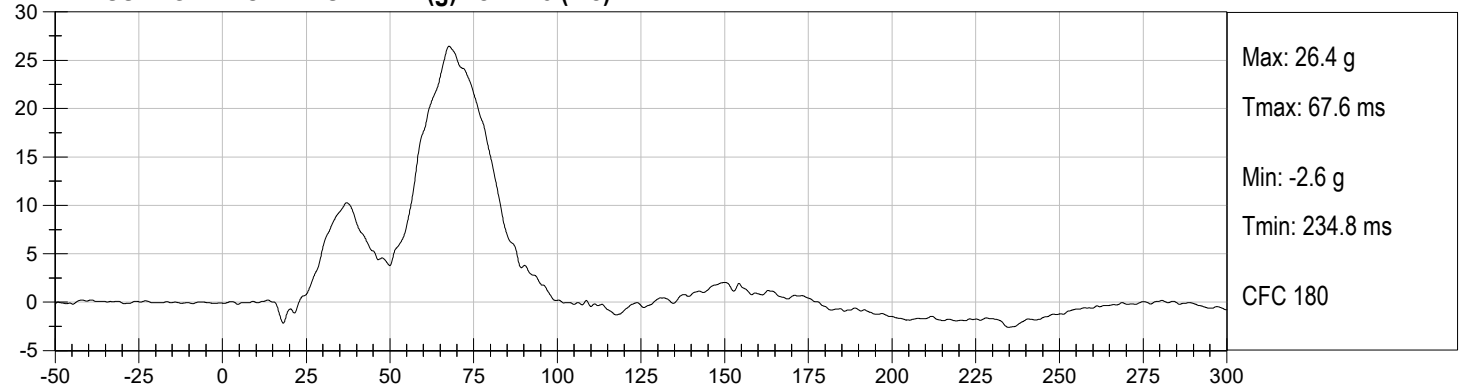
PASSENGER HEAD Resultant (g) vs Time (ms)



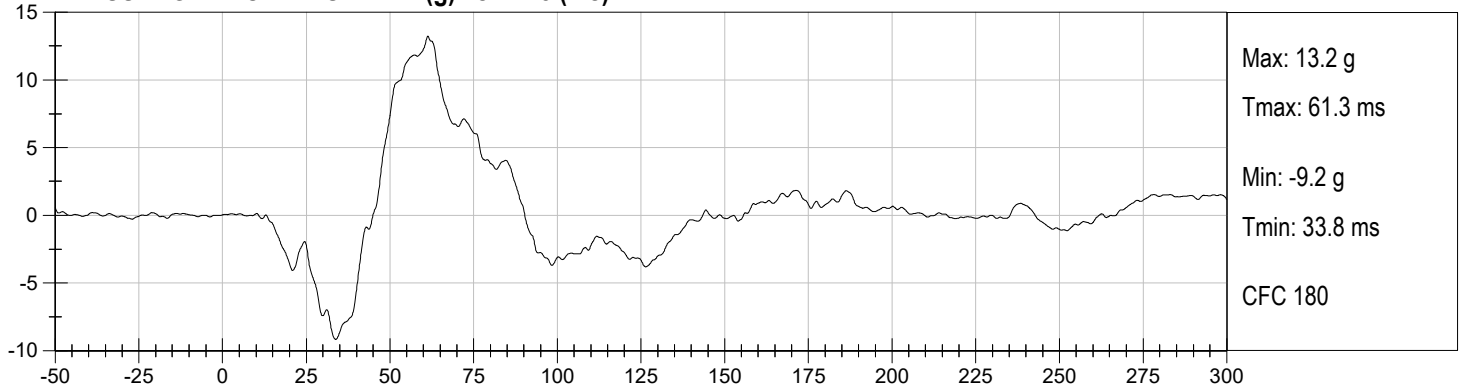
PASSENGER LOWER SPINE X (g) vs Time (ms)



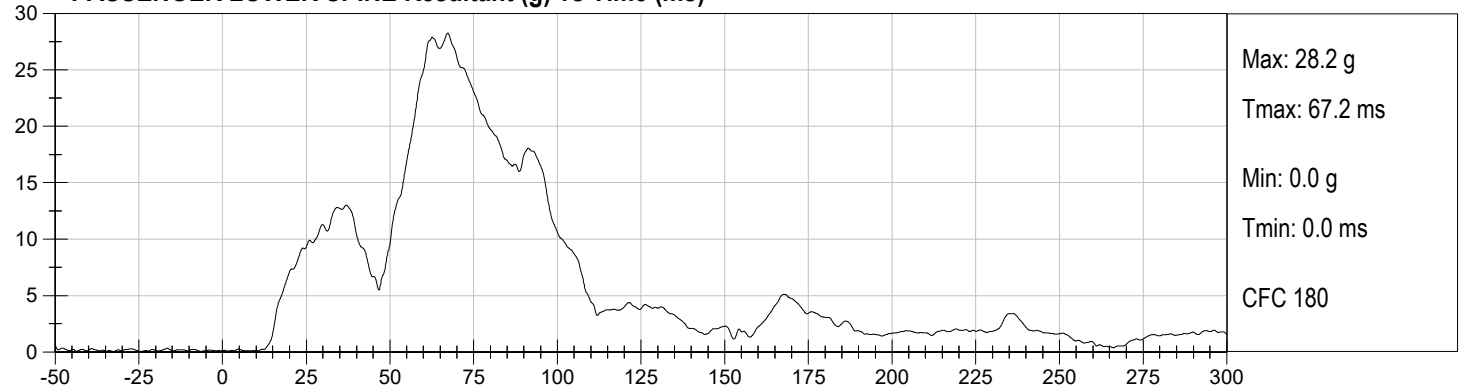
PASSENGER LOWER SPINE Y (g) vs Time (ms)



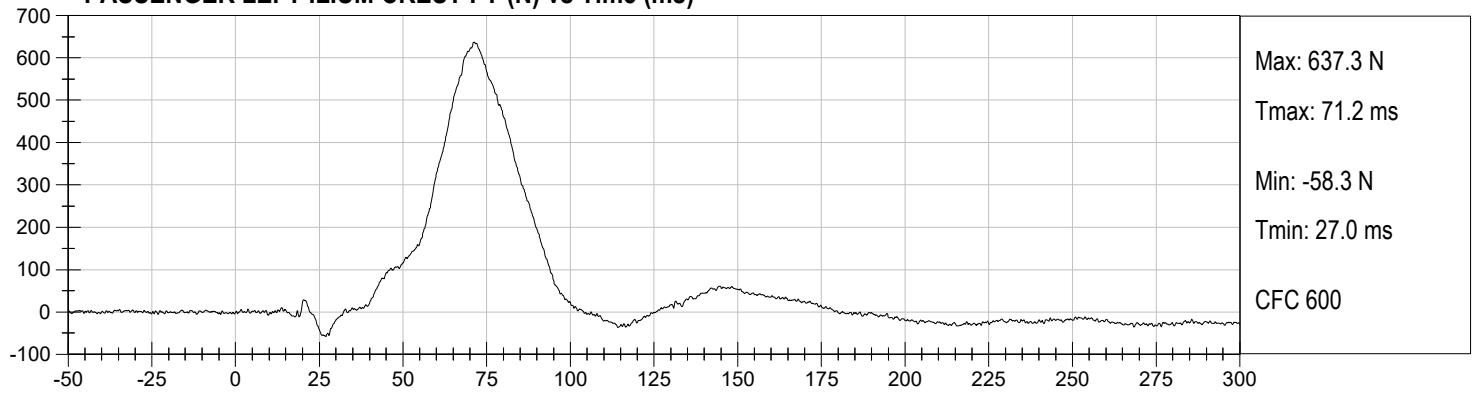
PASSENGER LOWER SPINE Z (g) vs Time (ms)



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



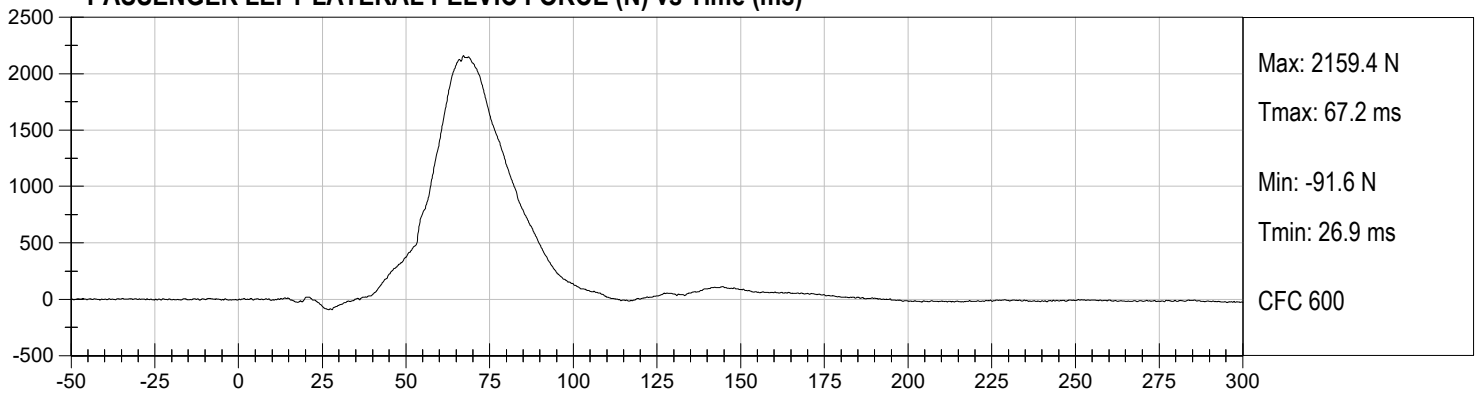
PASSENGER LEFT ILIUM CREST FY (N) vs Time (ms)



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



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



APPENDIX C
DUMMY QUALIFICATION AND PERFORMANCE VERIFICATION

QUALIFICATION TEST RESULTS

PRE-TEST

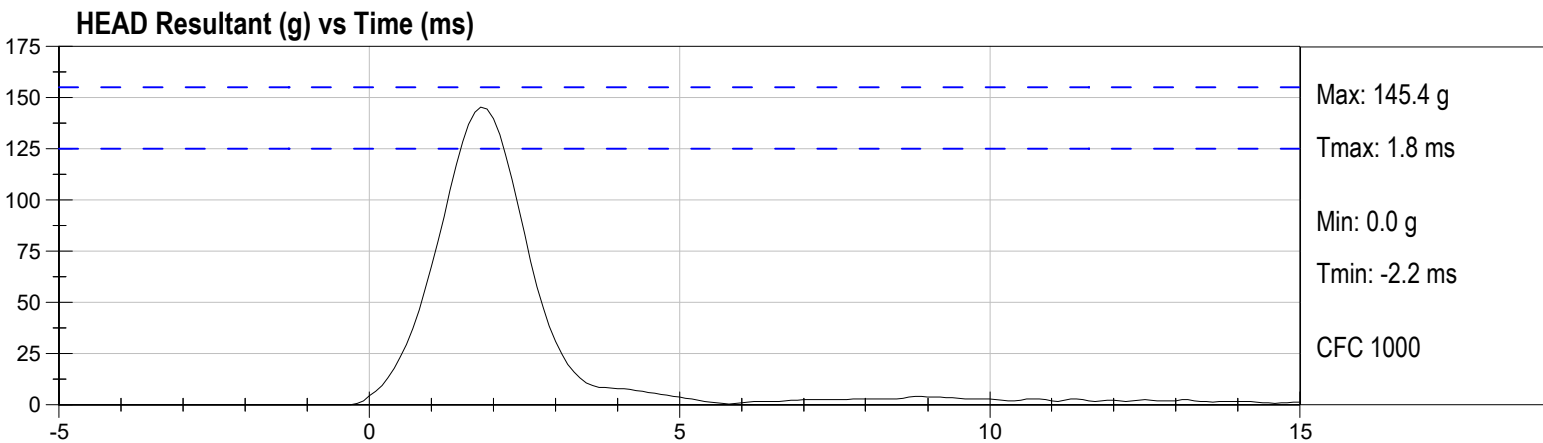
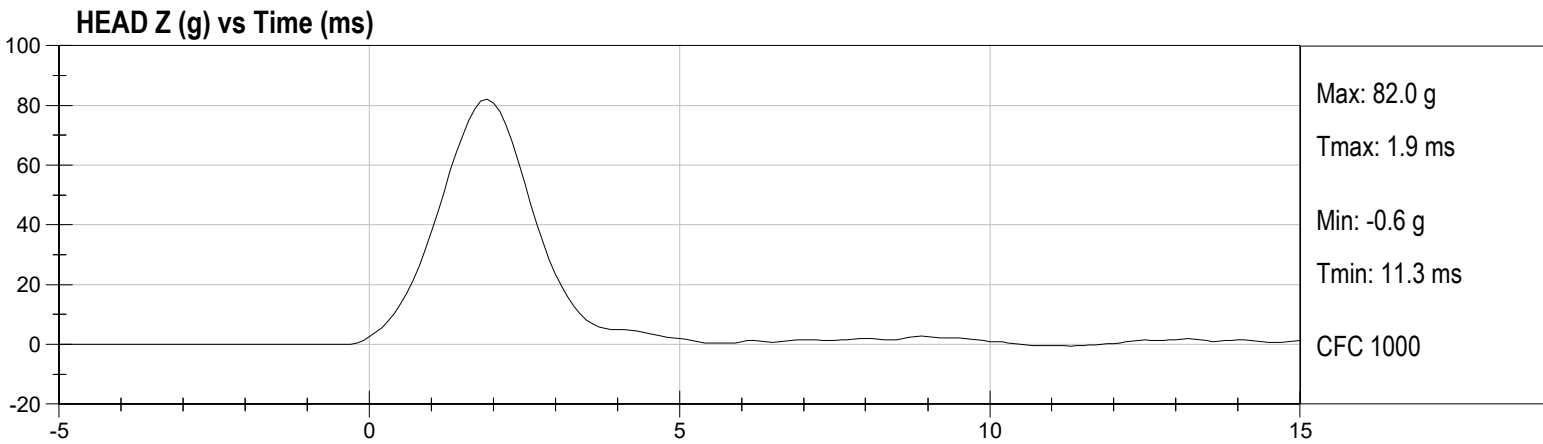
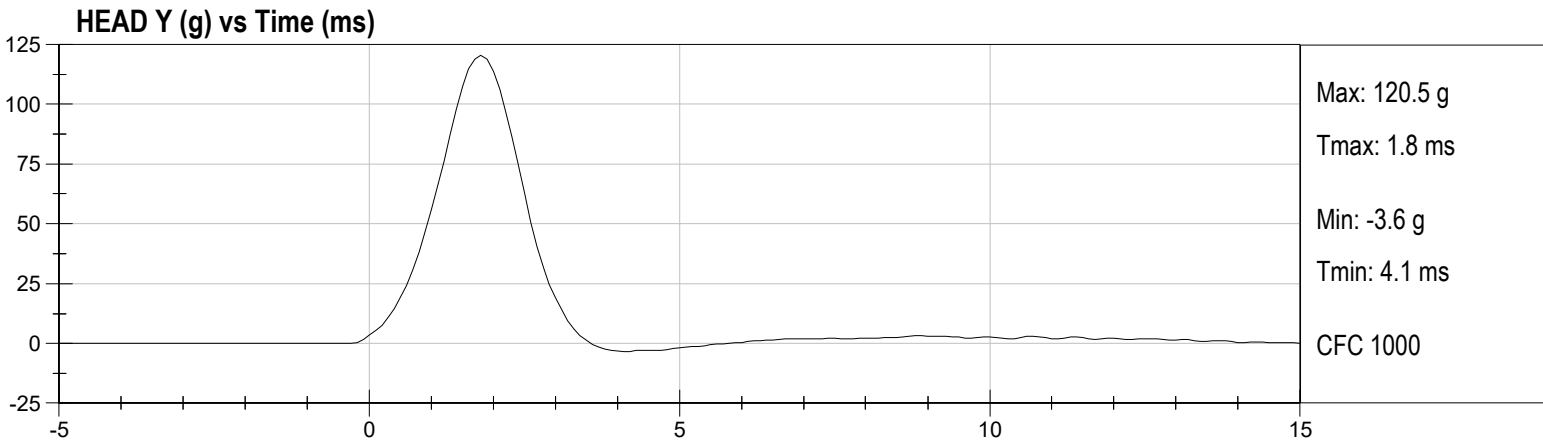
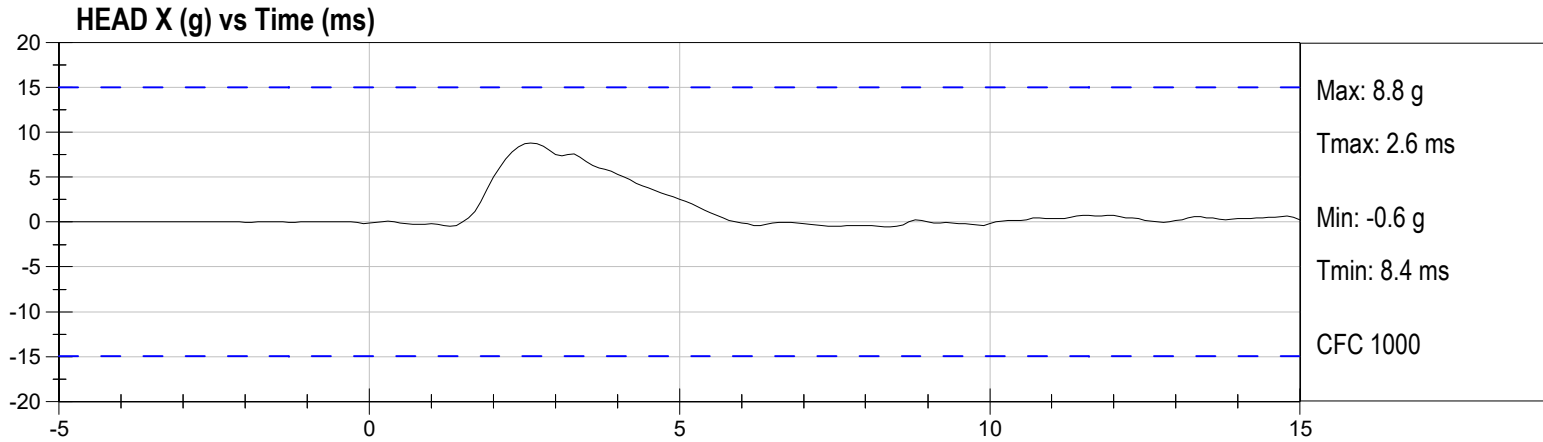
EUROSID 2 (ES-2RE) MALE – DRIVER ATD

ES-2re External Measurements
SN: F032

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

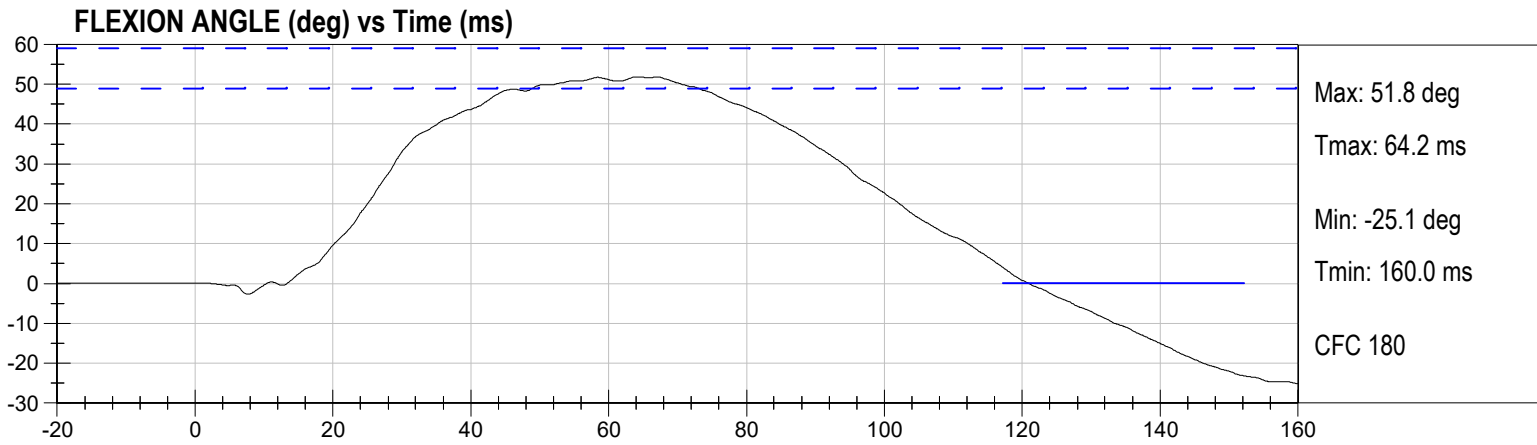
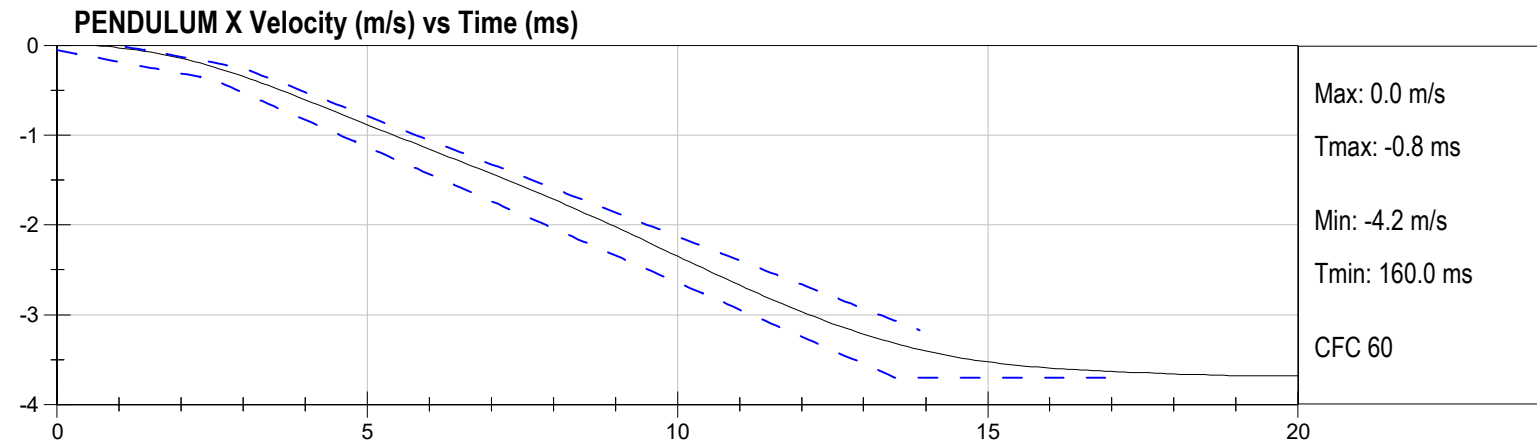
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Peak Resultant Acceleration	g	125 to 155	145	Pass
Peak Longitudinal Acceleration	g	-15 to 15	8.8	Pass
Unimodal	%	within 15% of peak	3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
HEAD X	Endevco	P78728	02/24/2025	8/26/2025
HEAD Y	Endevco	P78732	02/24/2025	8/26/2025
HEAD Z	Endevco	P78739	02/24/2025	8/26/2025

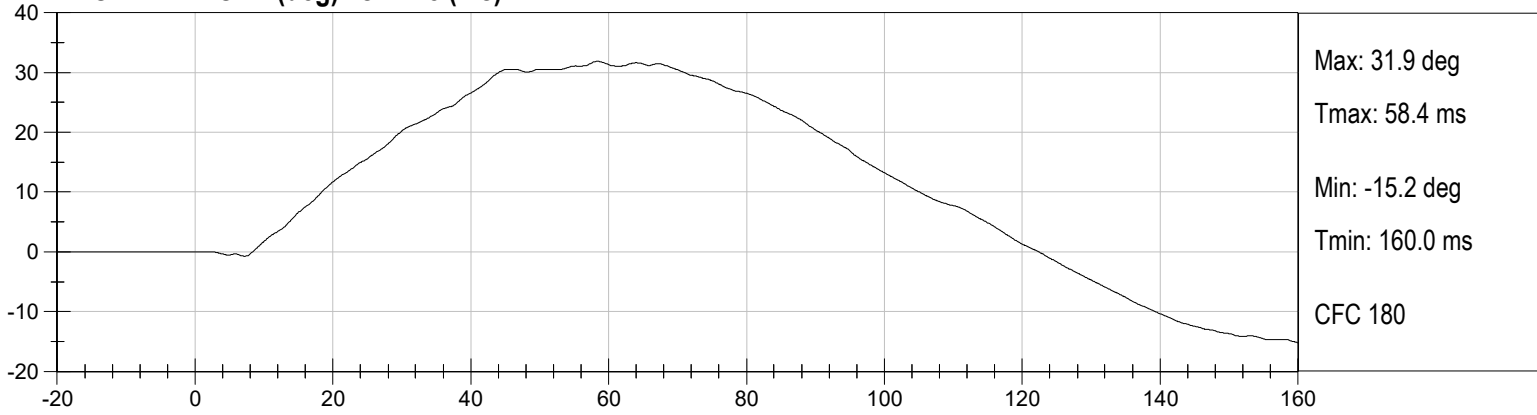


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	3.30 to 3.50	3.36	Pass
Pendulum Velocity Within Corridor	m/s	Within	Yes	Pass
Maximum Flexion Angle	deg	49 to 59	51.8	Pass
Time of Maximum Flexion Angle	ms	54 to 66	64.2	Pass
Decay Time to Zero Crossing	ms	53 to 88	56.9	Pass

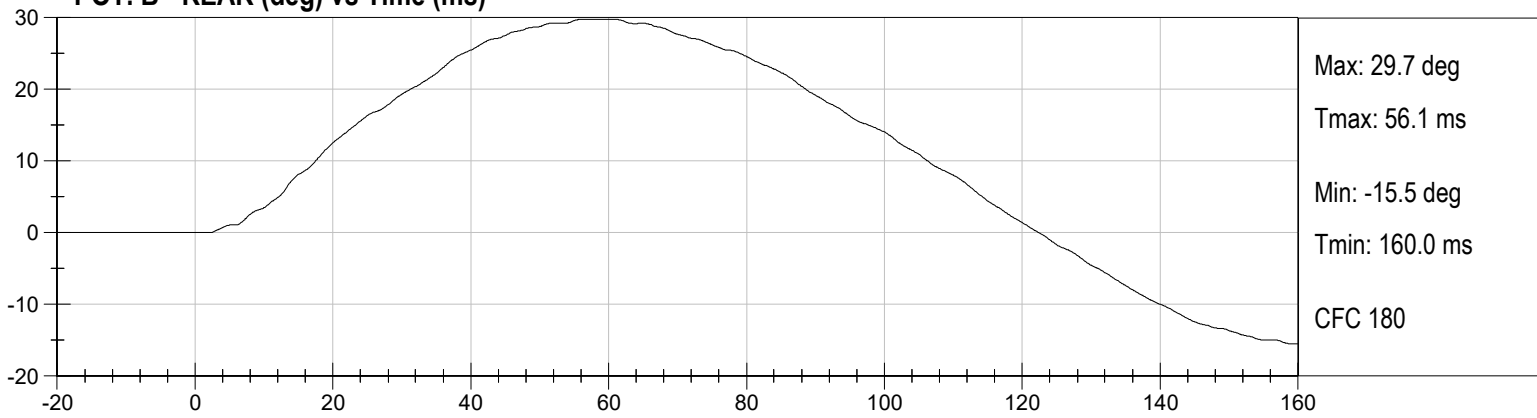
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PEND. ACCEL.	Endevco	AH5P1	07/09/2025	1/8/2026
POT. B - REAR	Spectrol	025_es2	07/15/2025	1/14/2026
POT. A - FRONT	Spectrol	027_es2	07/15/2025	1/14/2026
POT. C - HEADFORM	Spectrol	028_es2	07/15/2025	1/14/2026



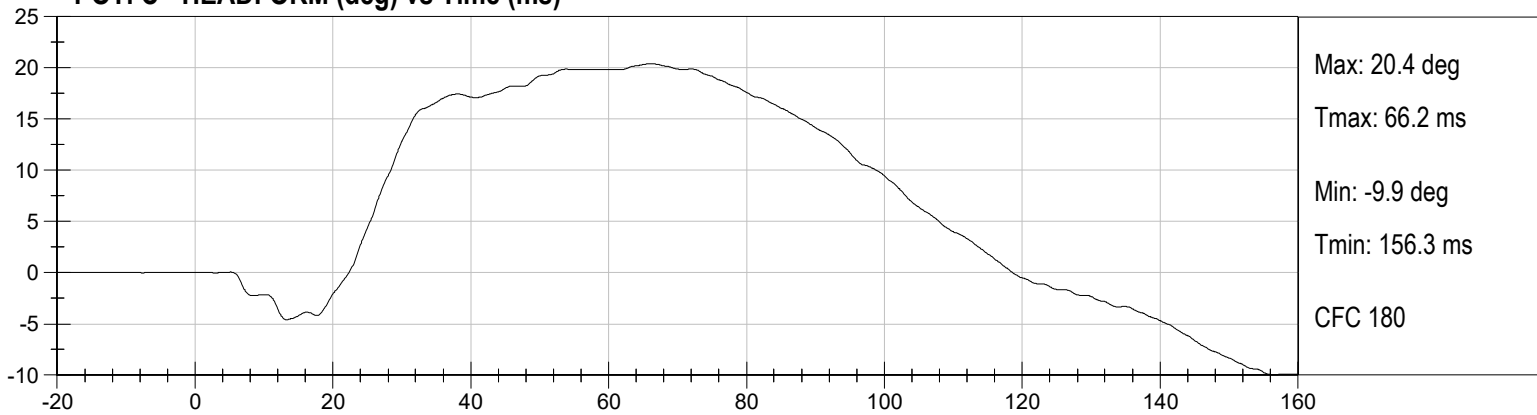
POT. A - FRONT (deg) vs Time (ms)



POT. B - REAR (deg) vs Time (ms)



POT. C - HEADFORM (deg) vs Time (ms)



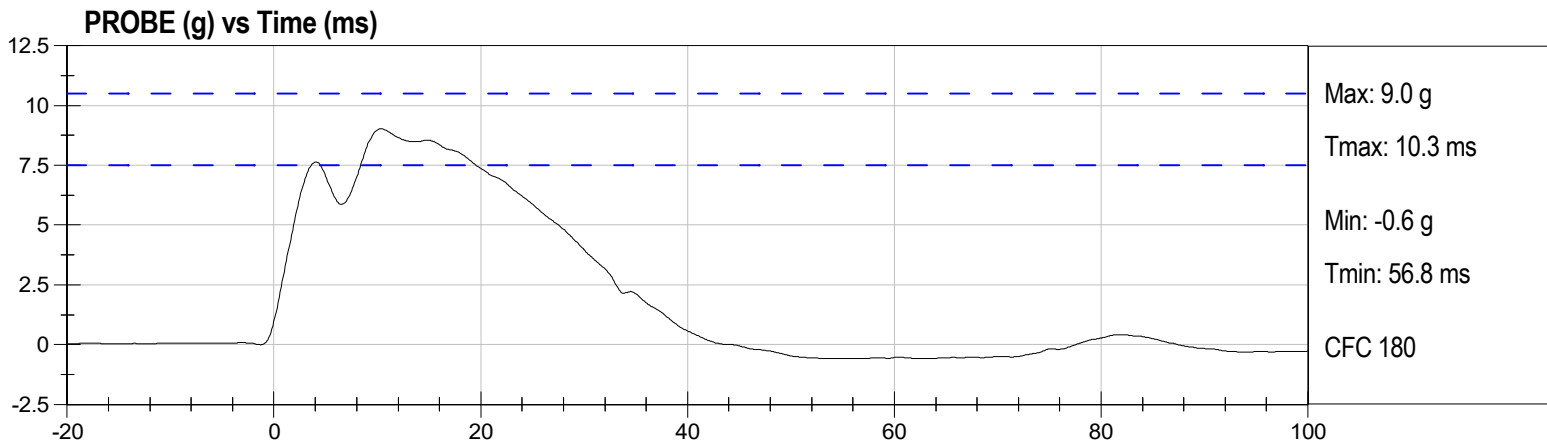


Shoulder Impact Test
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252043
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.2 to 4.4	4.2	Pass
Peak Probe Acceleration	G's	7.5 to 10.5	9.0	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025



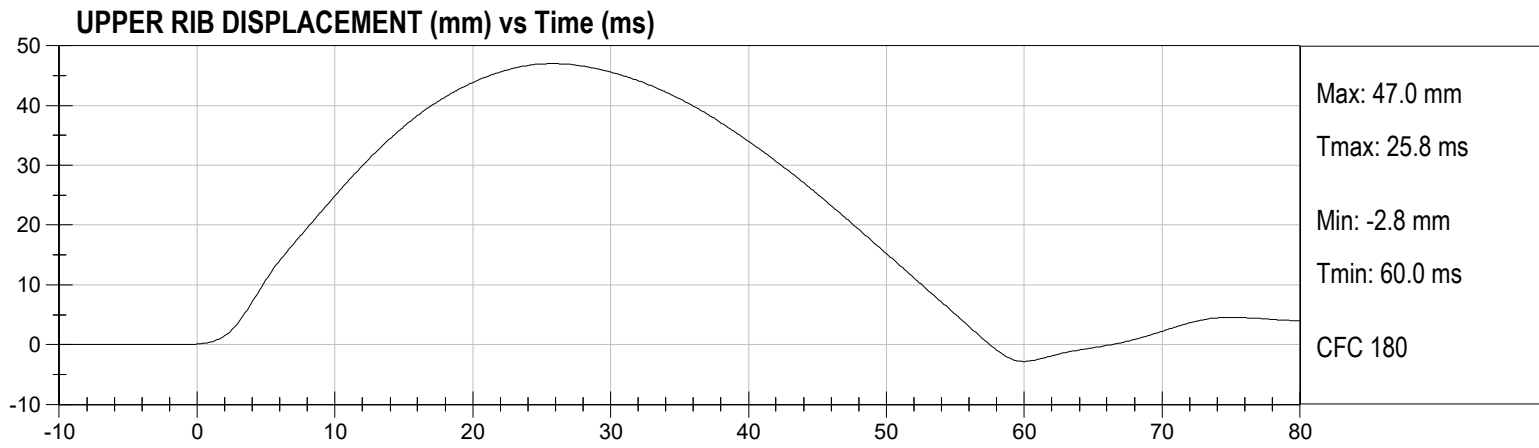


Upper Rib Drop Test - 815mm
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252044H
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Rib Deflection at 815 mm	mm	46 to 51	47.0	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
UPPER RIB DISPLACEMENT	Honeywell	G236	05/15/2025	11/14/2025



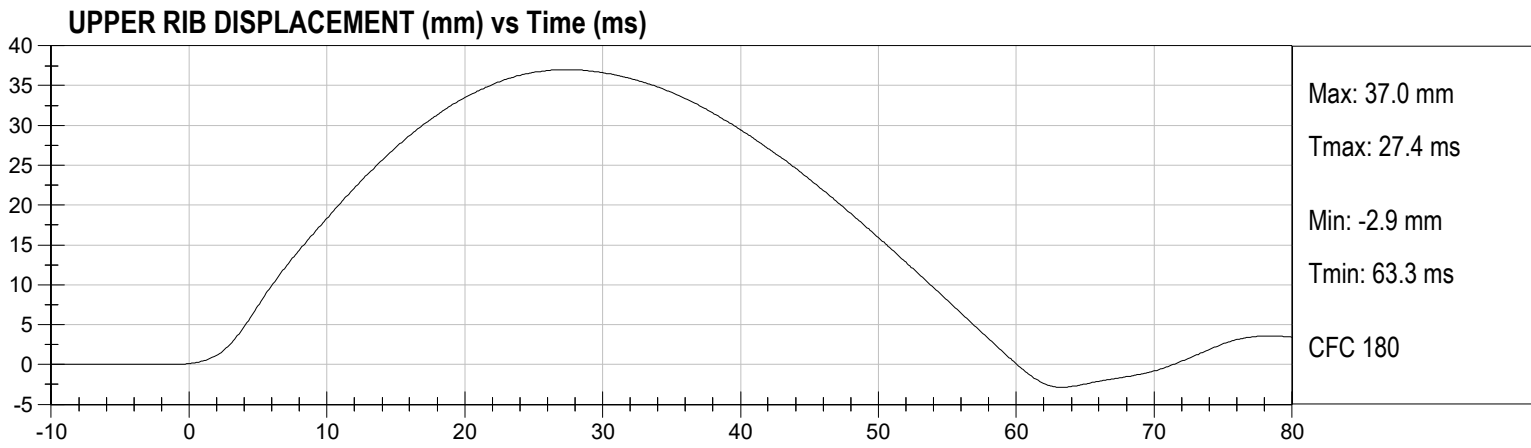


Upper Rib Drop Test - 459mm
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252044L
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Rib Deflection at 459 mm	mm	36 to 40	37.0	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
UPPER RIB DISPLACEMENT	Honeywell	G236	05/15/2025	11/14/2025



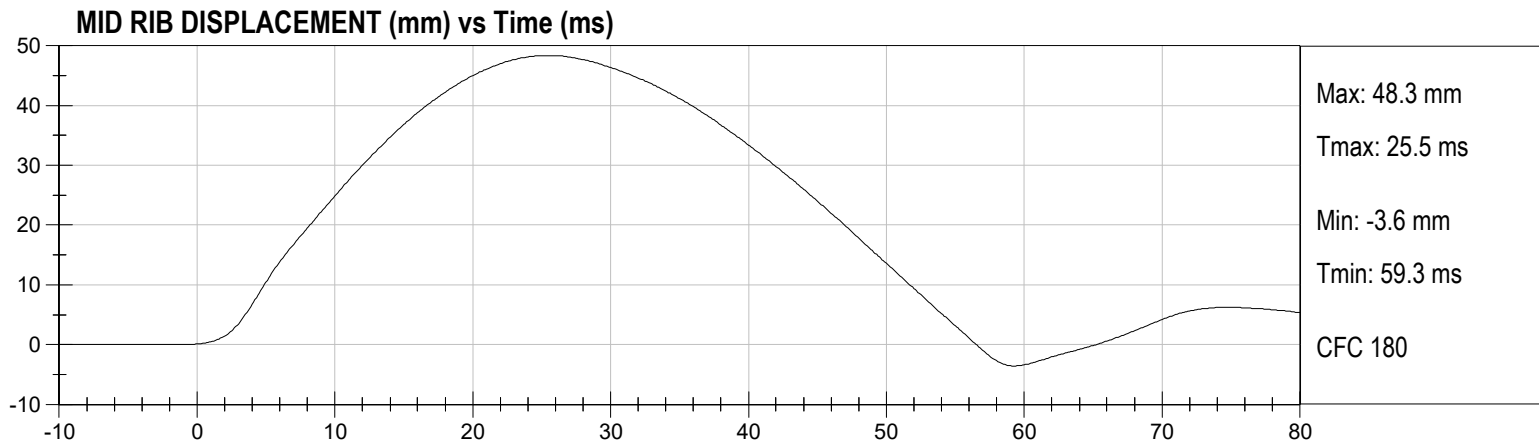


Middle Rib Drop Test - 815mm
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252045H
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Rib Deflection at 815 mm	mm	46 to 51	48.3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
MID RIB DISPLACEMENT	Honeywell	G368	05/15/2025	11/14/2025



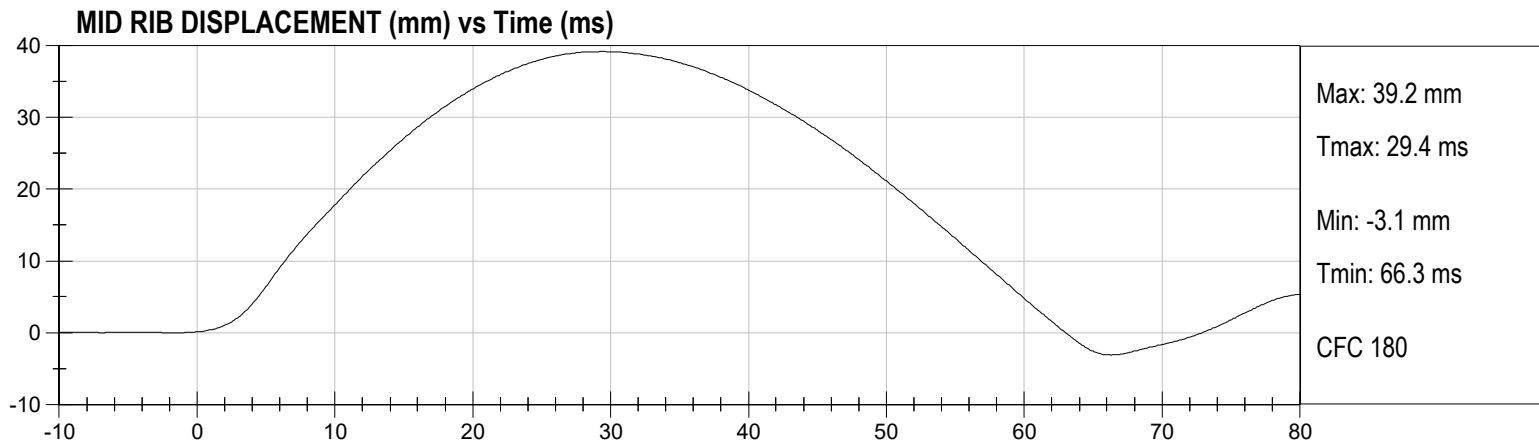


Middle Rib Drop Test - 459mm
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252045L
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Rib Deflection at 459 mm	mm	36 to 40	39.2	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
MID RIB DISPLACEMENT	Honeywell	G368	05/15/2025	11/14/2025



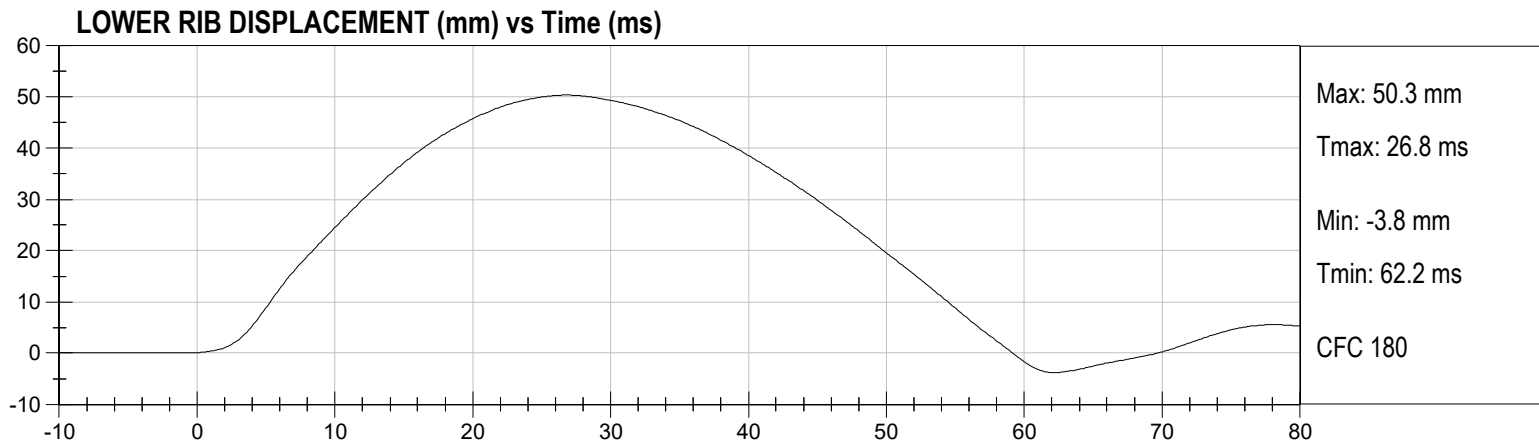


Lower Rib Drop Test - 815mm
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252046H
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Rib Deflection at 815 mm	mm	46 to 51	50.3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
LOWER RIB DISPLACEMENT	Honeywell	G164	05/15/2025	11/14/2025



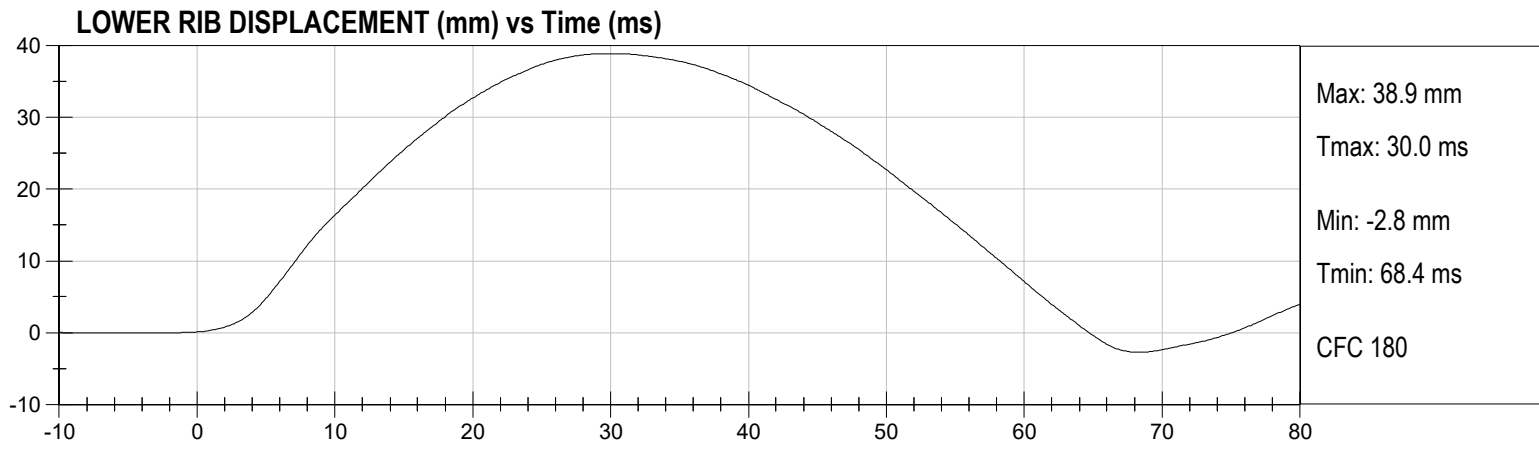


Lower Rib Drop Test - 459mm
ES2re
ATD Serial No: F032

Test Date: 07/16/2025
Test ID: D252046L
Test Technician: Jonah Pulokas

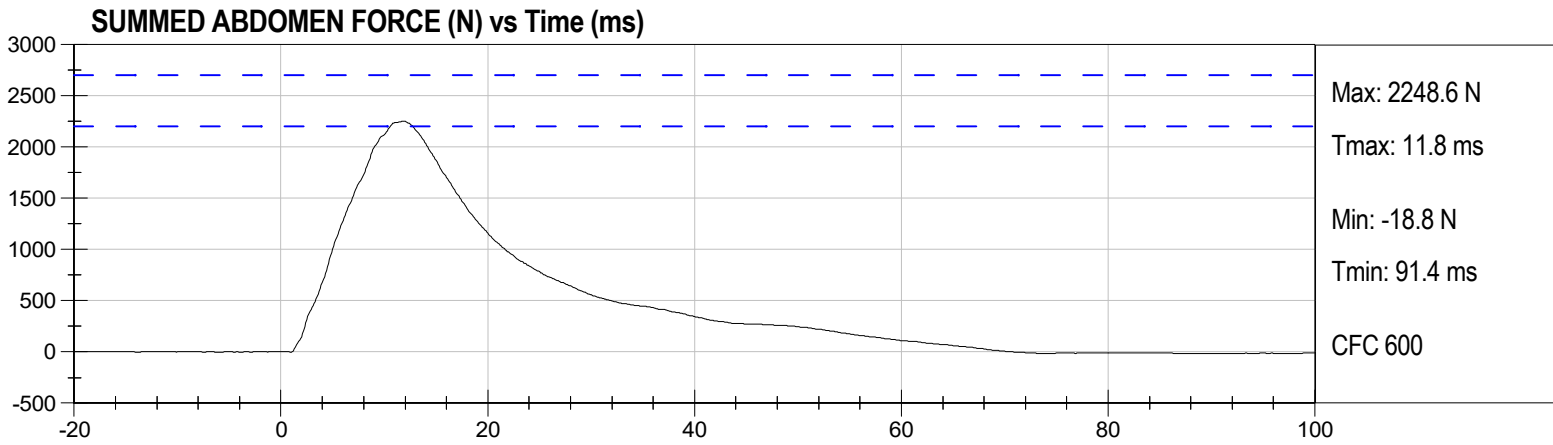
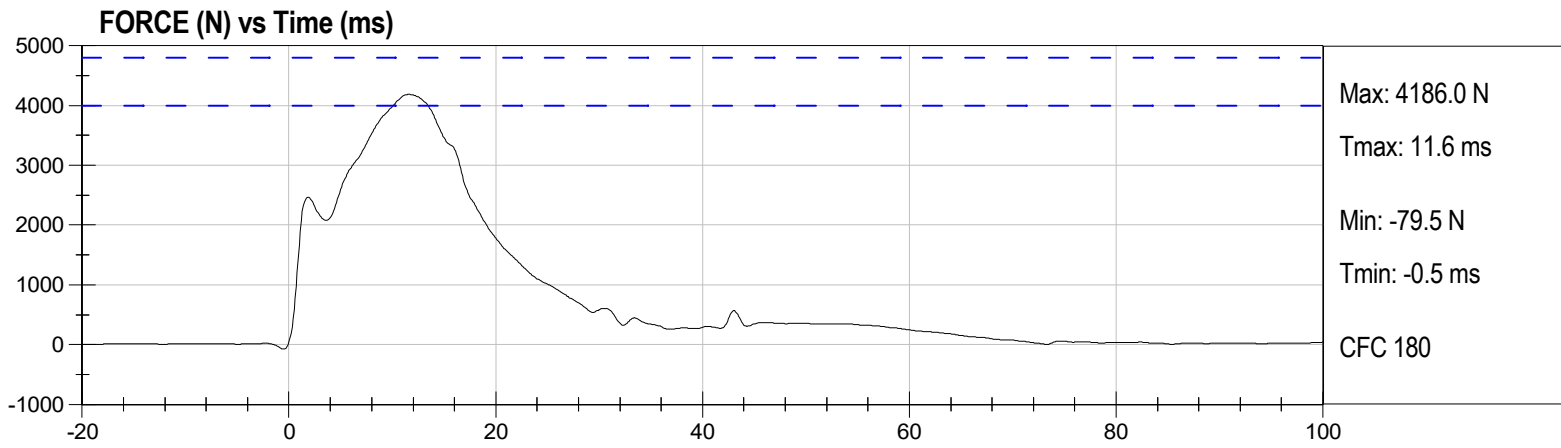
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Rib Deflection at 459 mm	mm	36 to 40	38.9	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
LOWER RIB DISPLACEMENT	Honeywell	G164	05/15/2025	11/14/2025

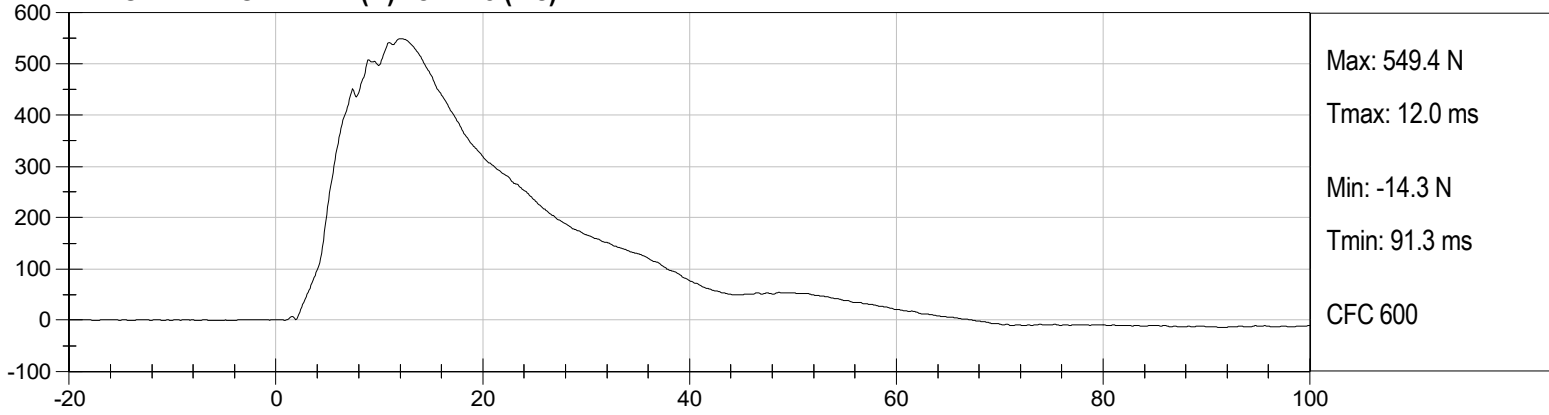


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	3.9 to 4.1	4.0	Pass
Peak Probe Force	N	4000 to 4800	4186	Pass
Time of Peak Probe Force	ms	10.6 to 13.0	11.6	Pass
Peak Abdomen Force	N	2200 to 2700	2249	Pass
Time of Peak Abdomen Force	ms	10.0 to 12.3	11.8	Pass

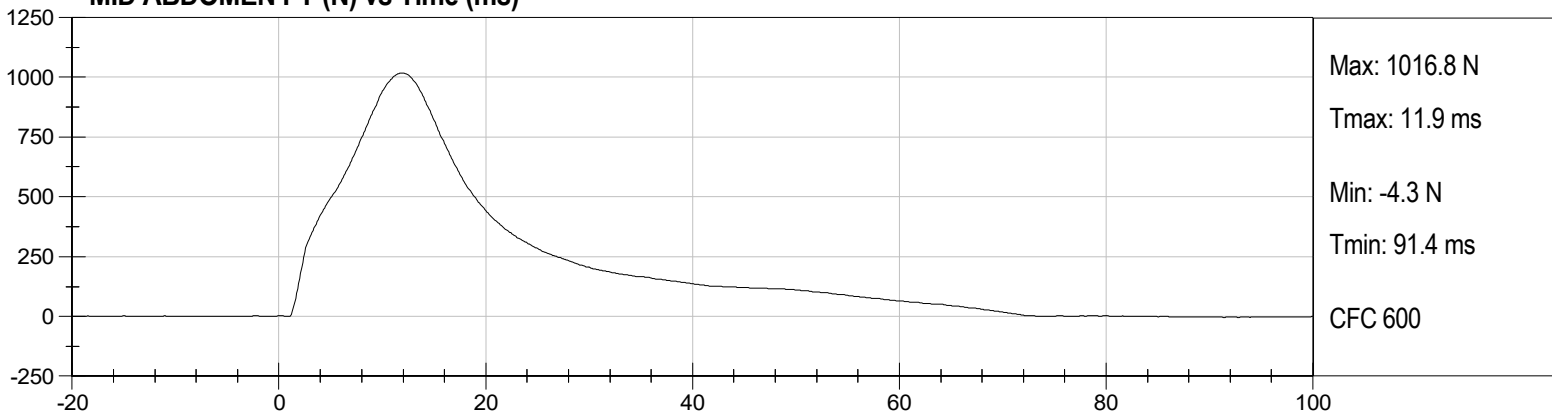
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
FRONT ABDOMEN FY	Denton	ABG1532FY	01/20/2025	1/20/2026
MID ABDOMEN FY	Denton	ABG1534FY	01/20/2025	1/20/2026
REAR ABDOMEN FY	Denton	ABG1535FY	01/20/2025	1/20/2026



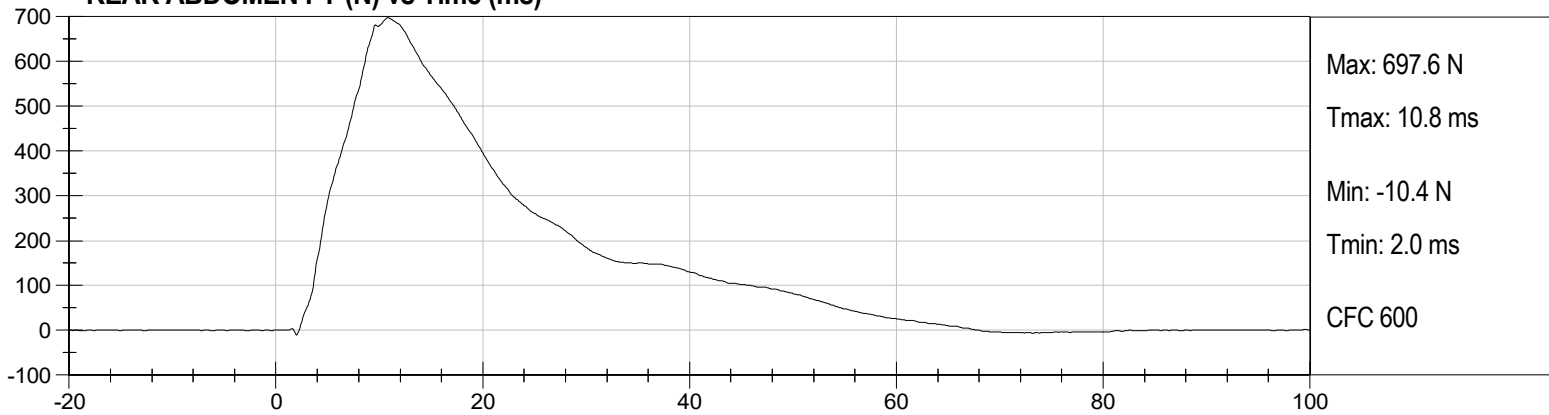
FRONT ABDOMEN FY (N) vs Time (ms)



MID ABDOMEN FY (N) vs Time (ms)



REAR ABDOMEN FY (N) vs Time (ms)



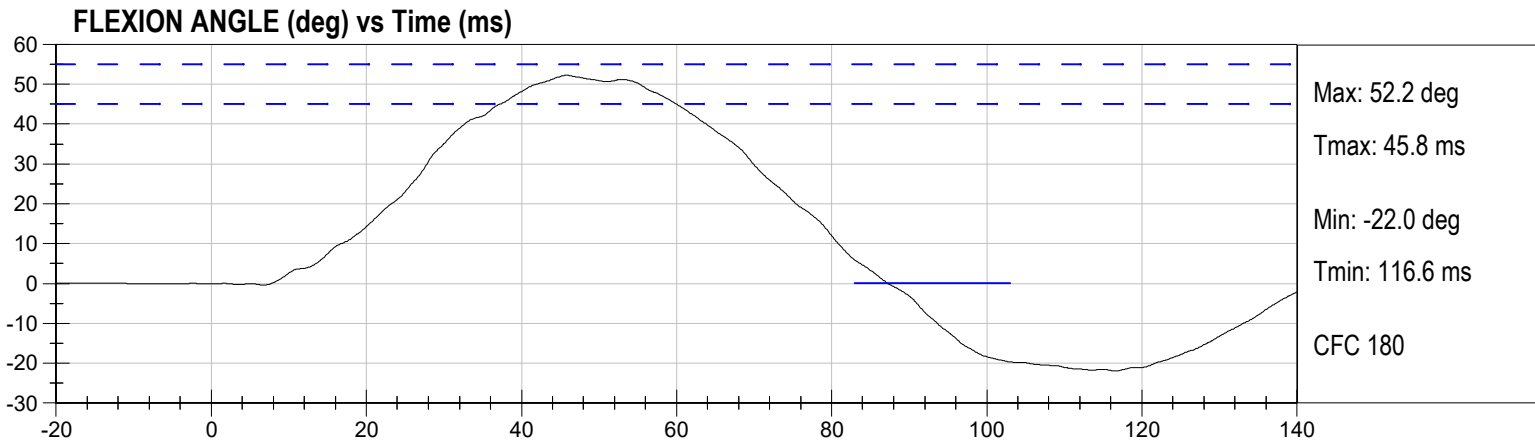
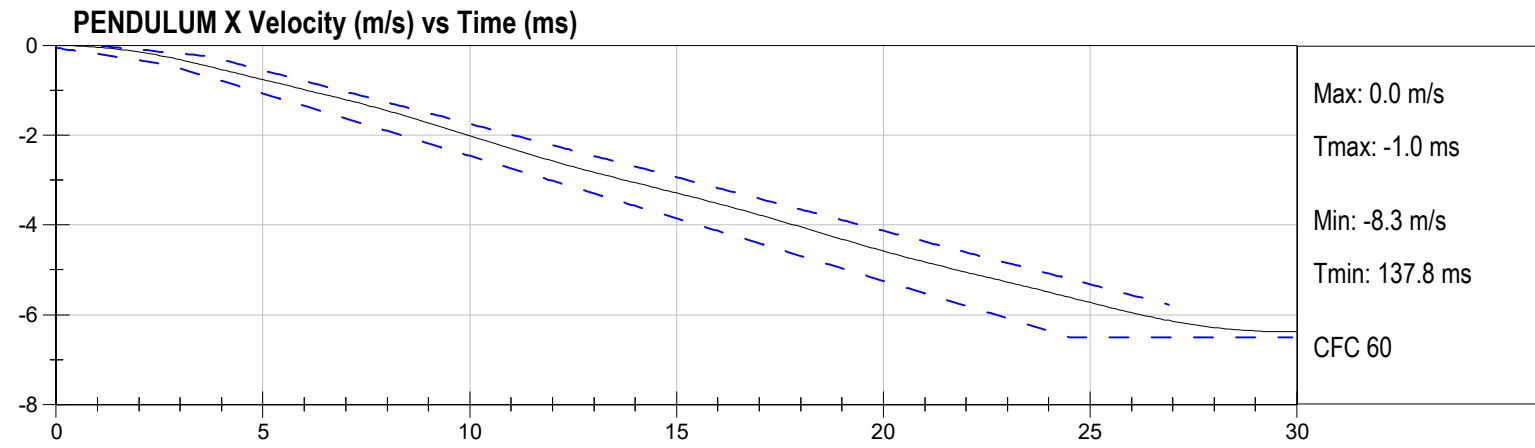


Lumbar Spine Flexion Test
ES2re
ATD Serial No: F032

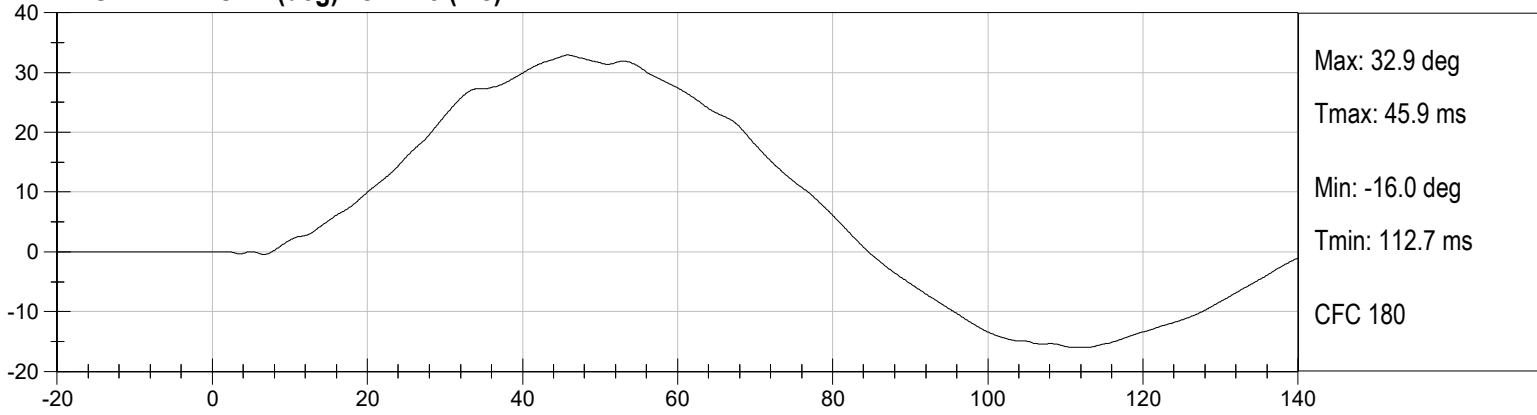
Test Date: 07/16/2025
Test ID: D252048
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	5.95 to 6.15	5.98	Pass
Pendulum Velocity Within Corridor	m/s	Within	Yes	Pass
Maximum Flexion Angle	deg	45 to 55	52	Pass
Time of Maximum Flexion Angle	ms	39 to 53	46	Pass
Decay Time to Zero Crossing from Peak	ms	37 to 57	41	Pass

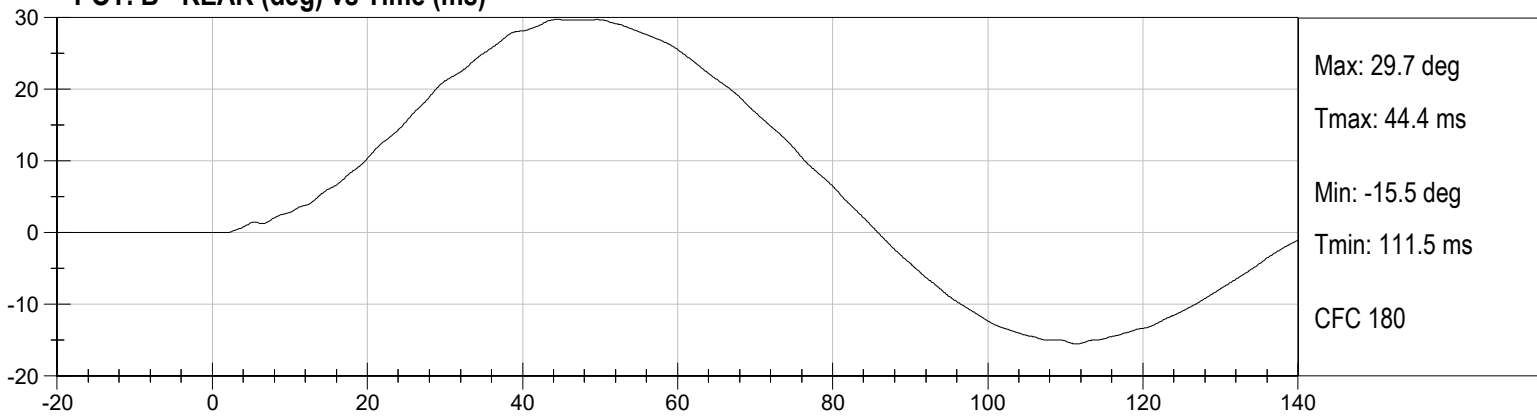
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PEND. ACCEL.	Endevco	AH5P1	07/09/2025	1/8/2026
POT. B - REAR	Spectrol	025_es2	07/15/2025	1/14/2026
POT. A - FRONT	Spectrol	027_es2	07/15/2025	1/14/2026
POT. C - HEADFORM	Spectrol	028_es2	07/15/2025	1/14/2026



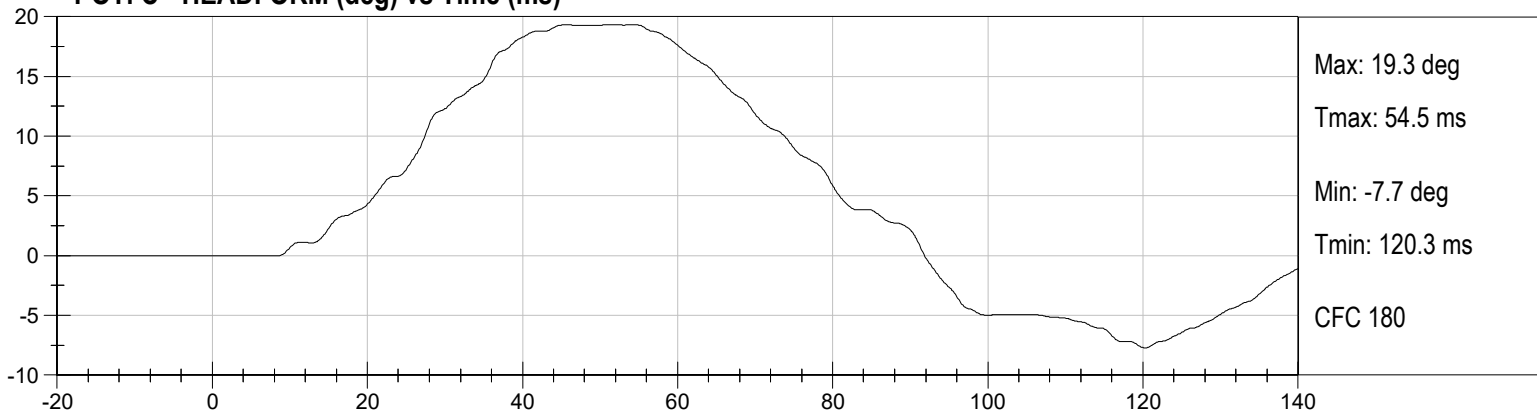
POT. A - FRONT (deg) vs Time (ms)



POT. B - REAR (deg) vs Time (ms)

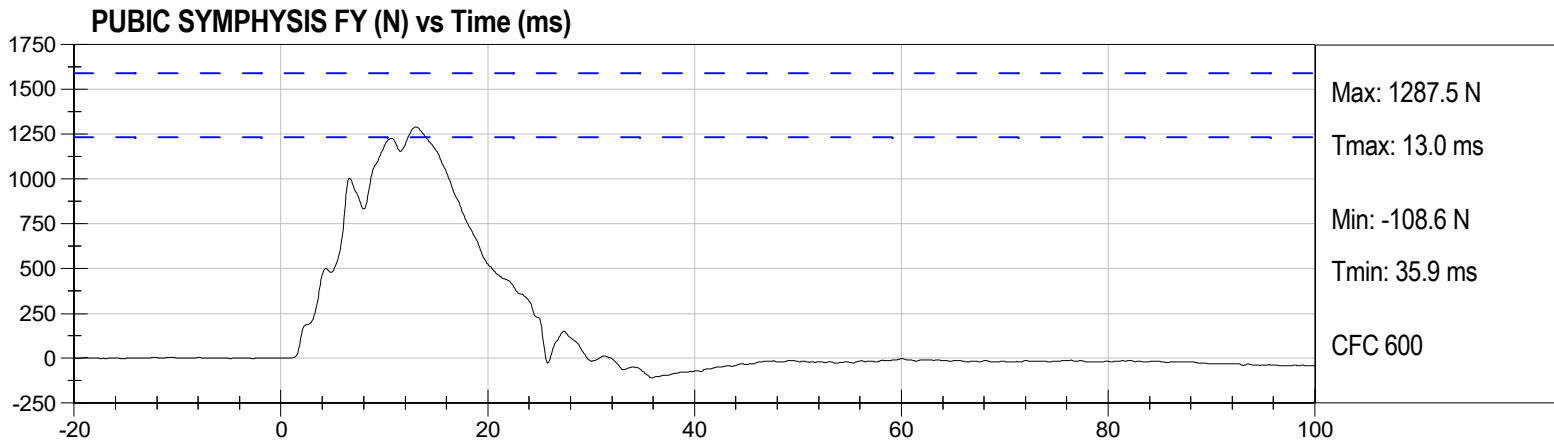
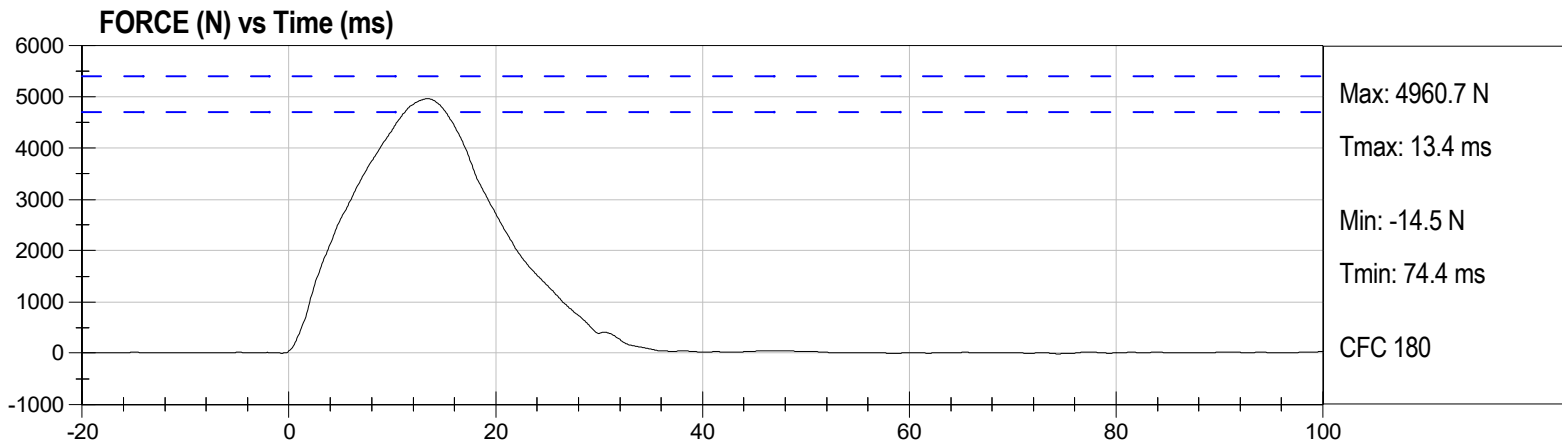


POT. C - HEADFORM (deg) vs Time (ms)



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.2 to 4.4	4.34	Pass
Peak Probe Force	N	4700 to 5400	4961	Pass
Time of Peak Probe Force	ms	11.8 to 16.1	13.4	Pass
Peak Pubic Force	N	1230 to 1590	1288	Pass
Time of Peak Pubic Force	ms	12.2 to 17.0	13.0	Pass

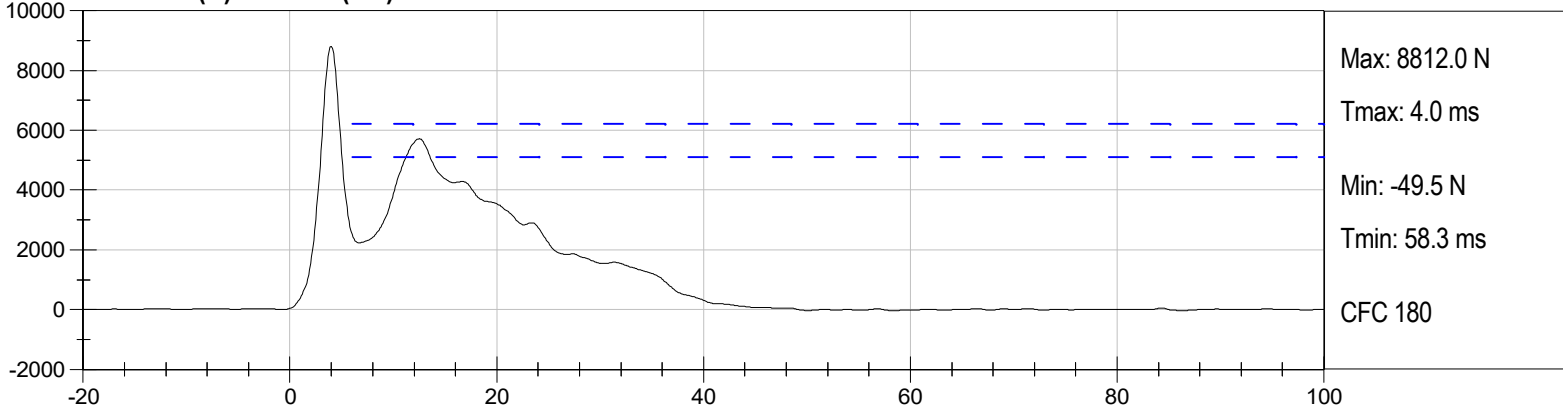
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
PUBIC SYMPHYSIS FY	Denton	PG461FY	01/20/2025	1/20/2026



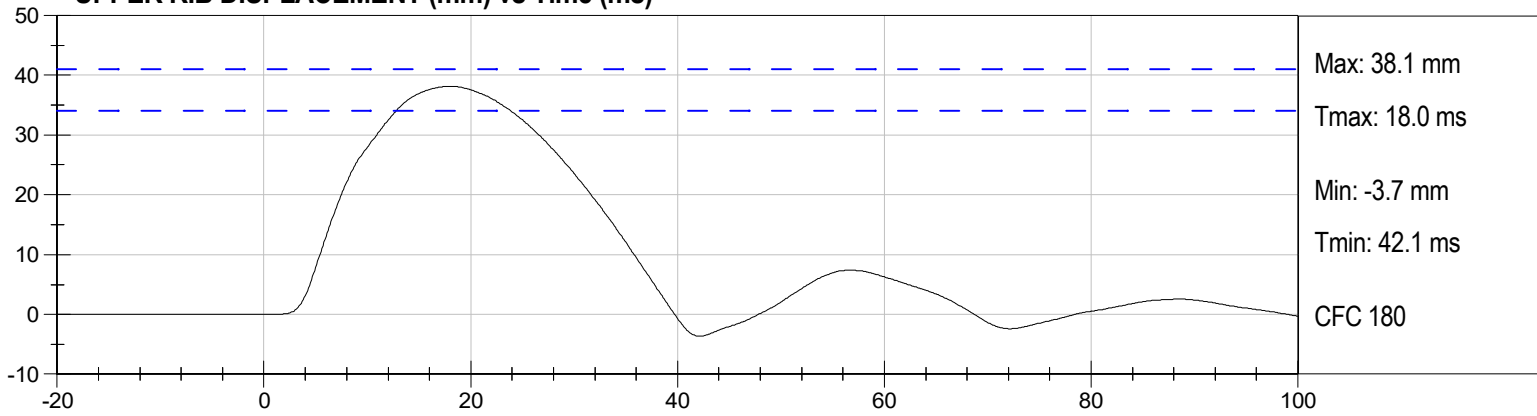
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Impact Velocity	m/s	5.4 to 5.6	5.40	Pass
Peak Probe Force after 6 ms	N	5100 to 6200	5715	Pass
Maximum Upper Thorax Rib Displacement	mm	34 to 41	38.1	Pass
Maximum Middle Thorax Rib Displacement	mm	37 to 45	40.0	Pass
Maximum Lower Thorax Rib Displacement	mm	37 to 44	39.4	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER RIB DISPLACEMENT	Honeywell	G236	05/15/2025	11/14/2025
MID RIB DISPLACEMENT	Honeywell	G368	05/15/2025	11/14/2025
LOWER RIB DISPLACEMENT	Honeywell	G164	05/15/2025	11/14/2025

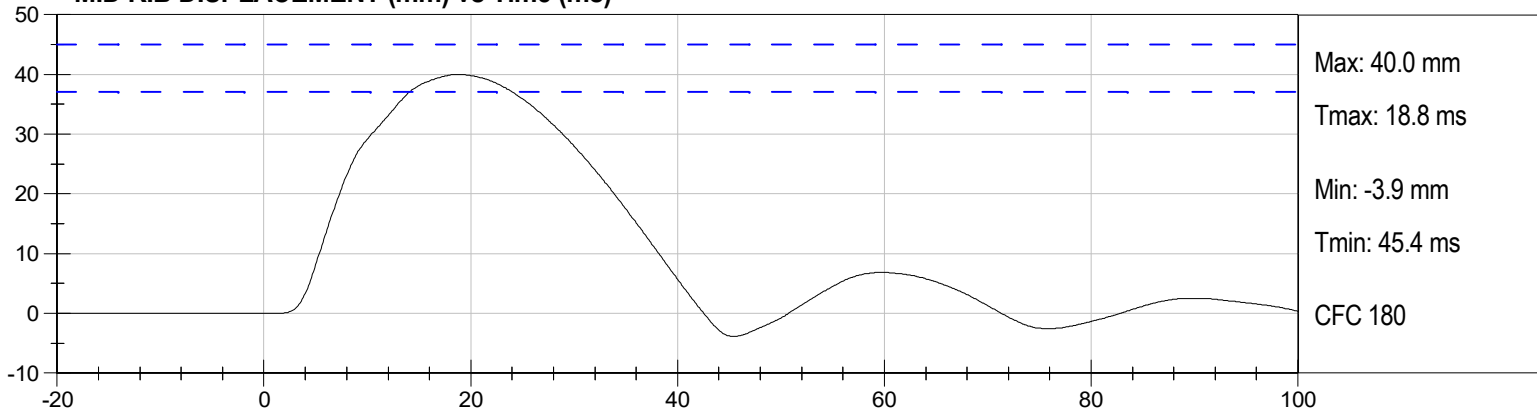
FORCE (N) vs Time (ms)



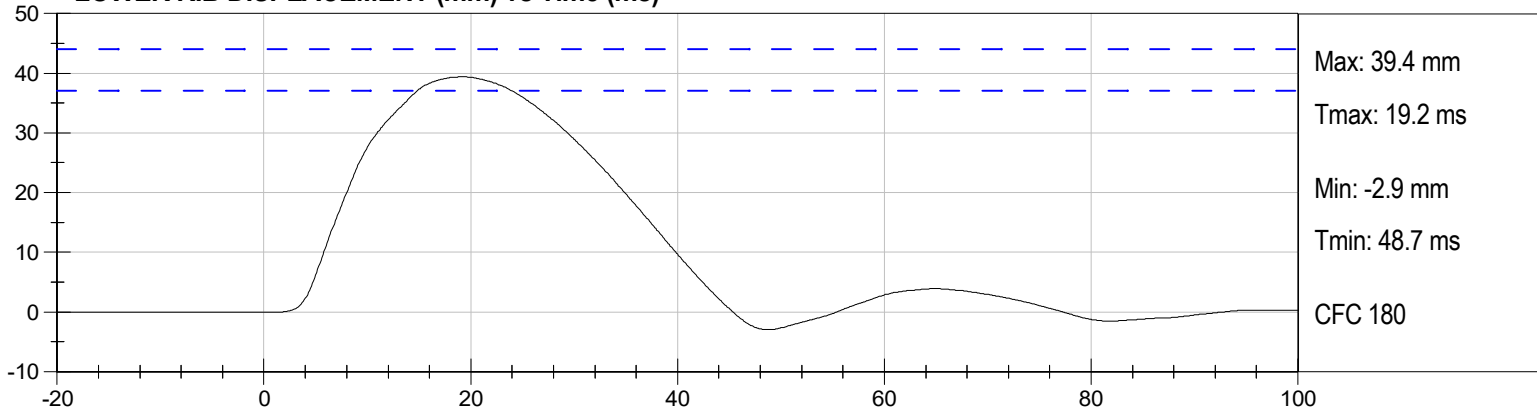
UPPER RIB DISPLACEMENT (mm) vs Time (ms)



MID RIB DISPLACEMENT (mm) vs Time (ms)



LOWER RIB DISPLACEMENT (mm) vs Time (ms)



QUALIFICATION TEST RESULTS

POST-TEST

EUROSID 2 (ES-2RE) MALE – DRIVER ATD

ES-2re External Measurements
SN: F032

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

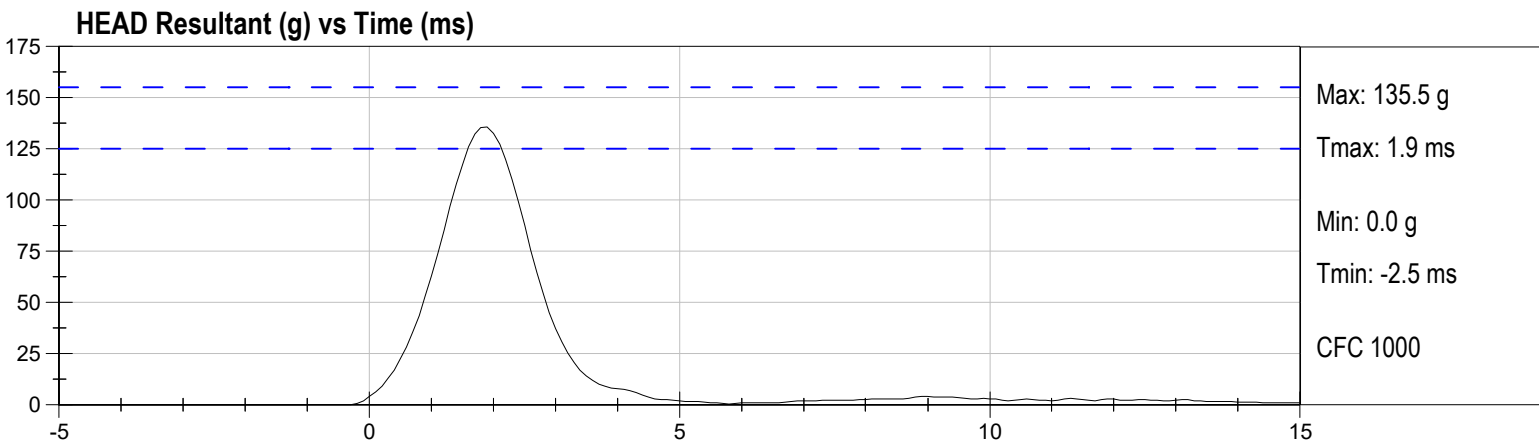
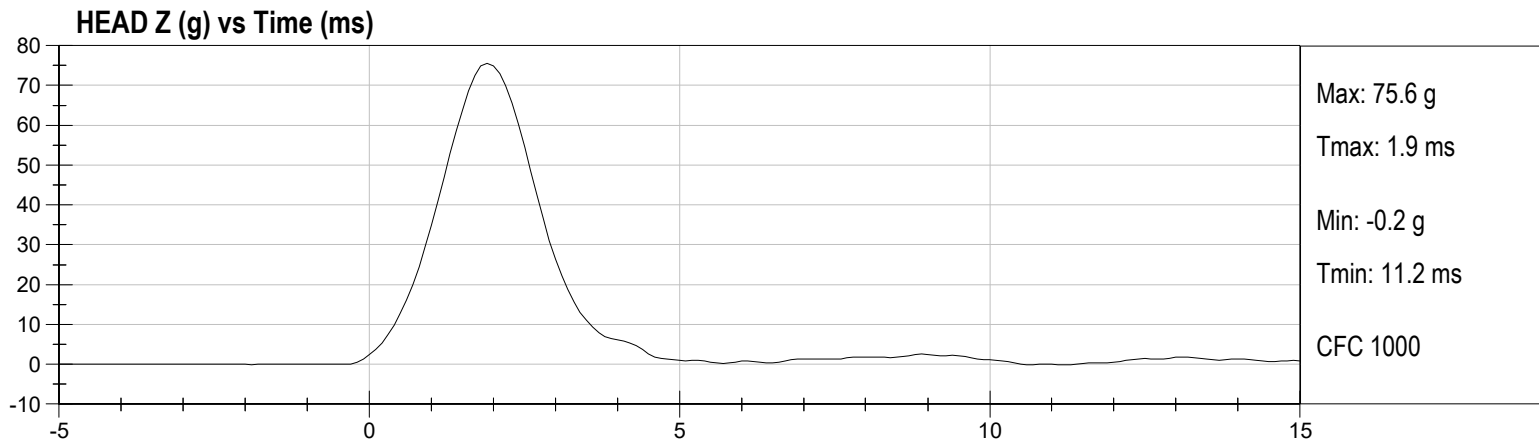
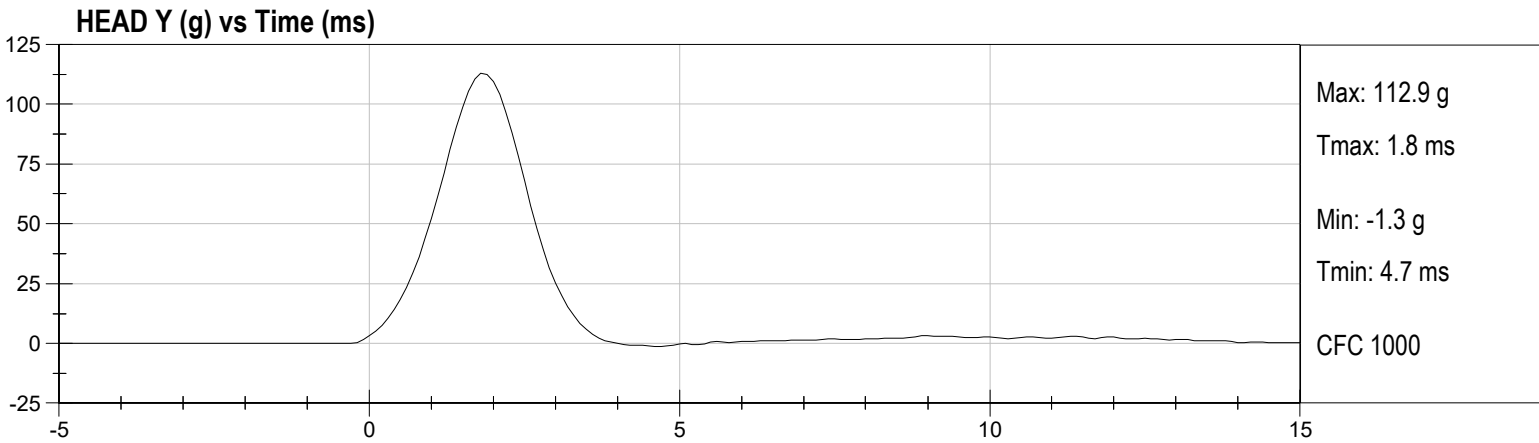
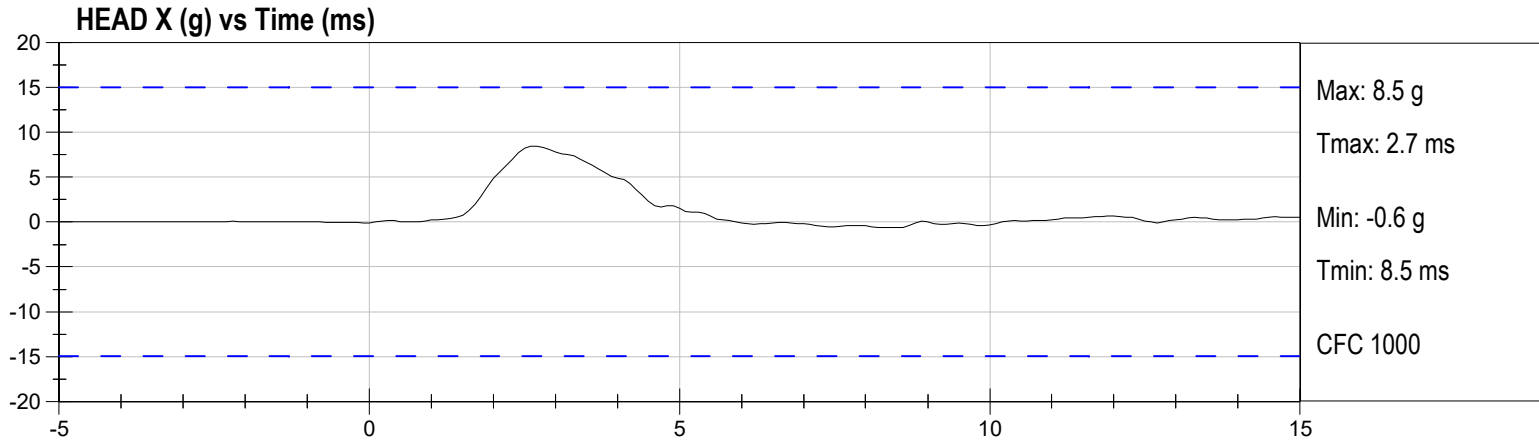


Lateral Head Drop Test
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252321
Test Technician: Jonah Pulokas

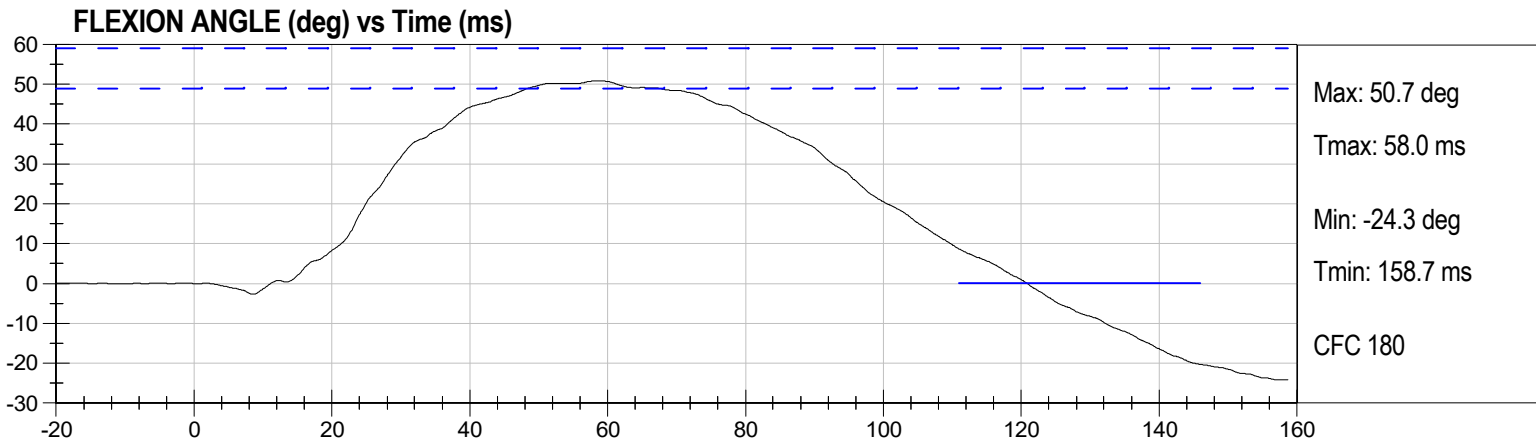
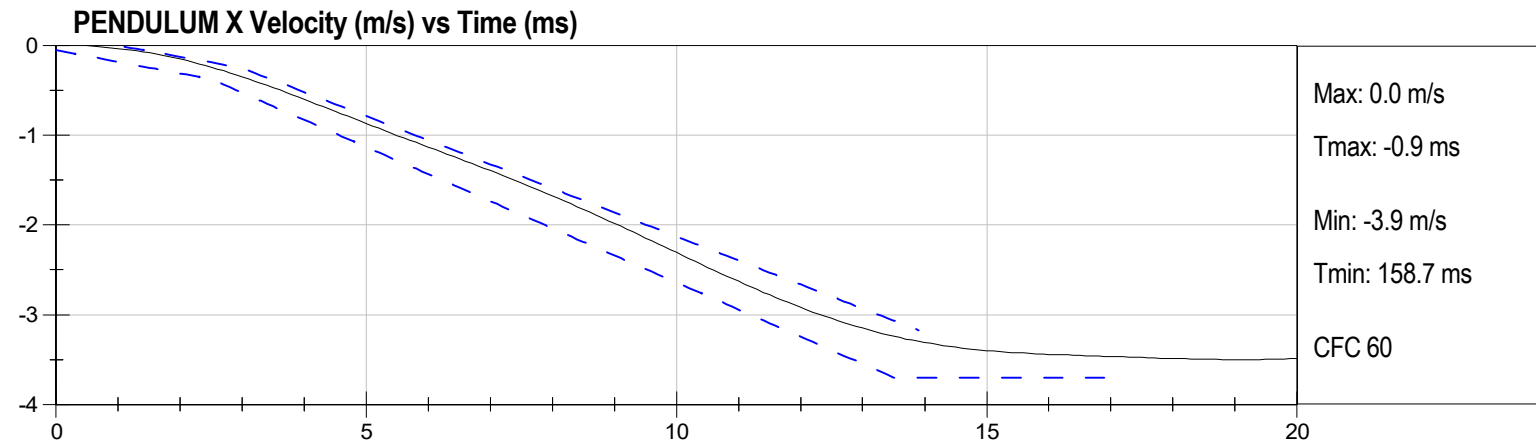
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Peak Resultant Acceleration	g	125 to 155	136	Pass
Peak Longitudinal Acceleration	g	-15 to 15	8.5	Pass
Unimodal	%	within 15% of peak	3	Pass

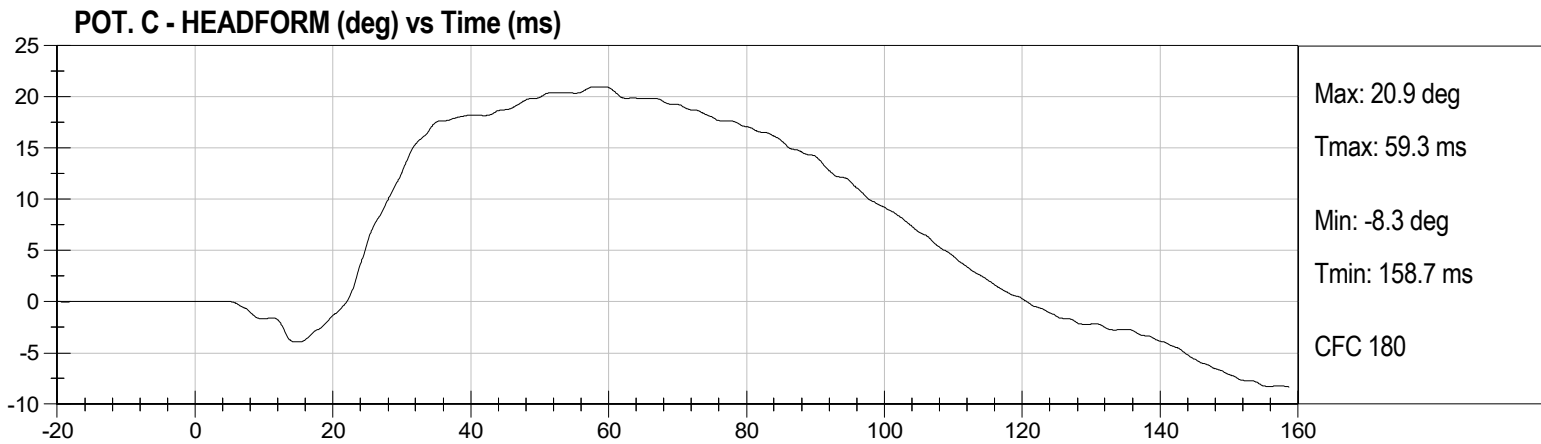
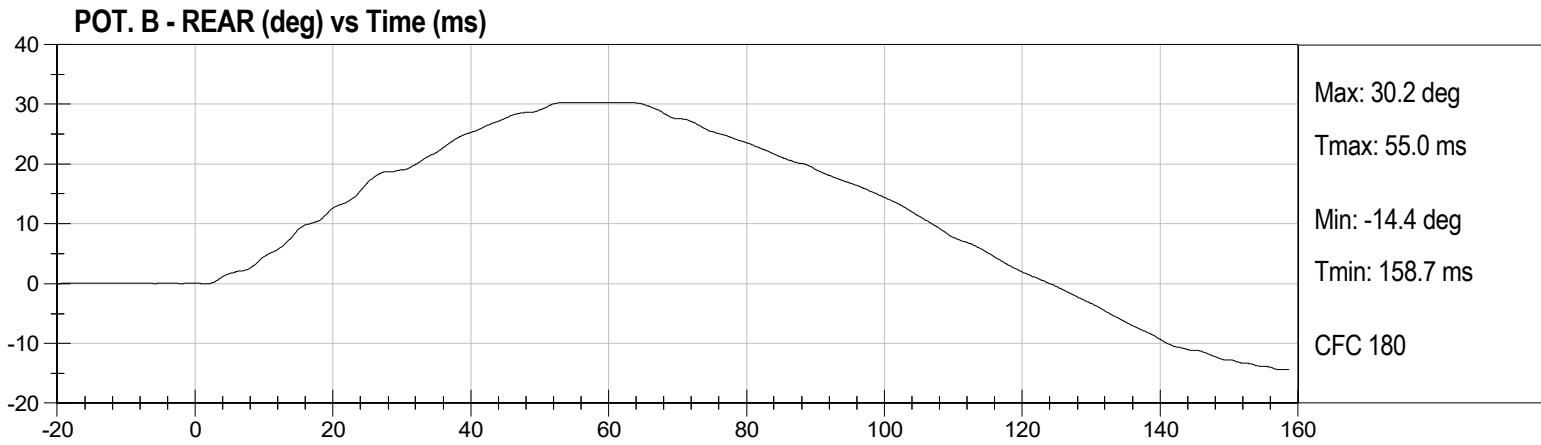
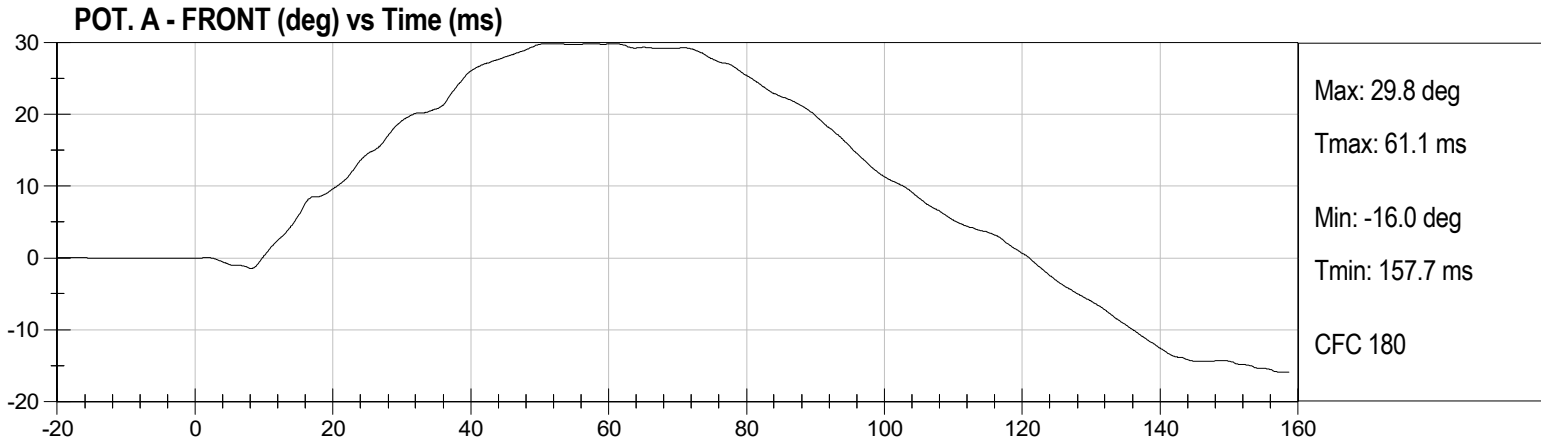
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
HEAD X	Endevco	P78728	02/24/2025	8/26/2025
HEAD Y	Endevco	P78732	02/24/2025	8/26/2025
HEAD Z	Endevco	P78739	02/24/2025	8/26/2025



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	3.30 to 3.50	3.40	Pass
Pendulum Velocity Within Corridor	m/s	Within	Yes	Pass
Maximum Flexion Angle	deg	49 to 59	50.7	Pass
Time of Maximum Flexion Angle	ms	54 to 66	58.0	Pass
Decay Time to Zero Crossing	ms	53 to 88	63.0	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PEND. ACCEL.	Endevco	C19538	05/19/2025	11/18/2025
POT. B - REAR	Spectrol	025_es2	07/15/2025	1/14/2026
POT. A - FRONT	Spectrol	027_es2	07/15/2025	1/14/2026
POT. C - HEADFORM	Spectrol	028_es2	07/15/2025	1/14/2026





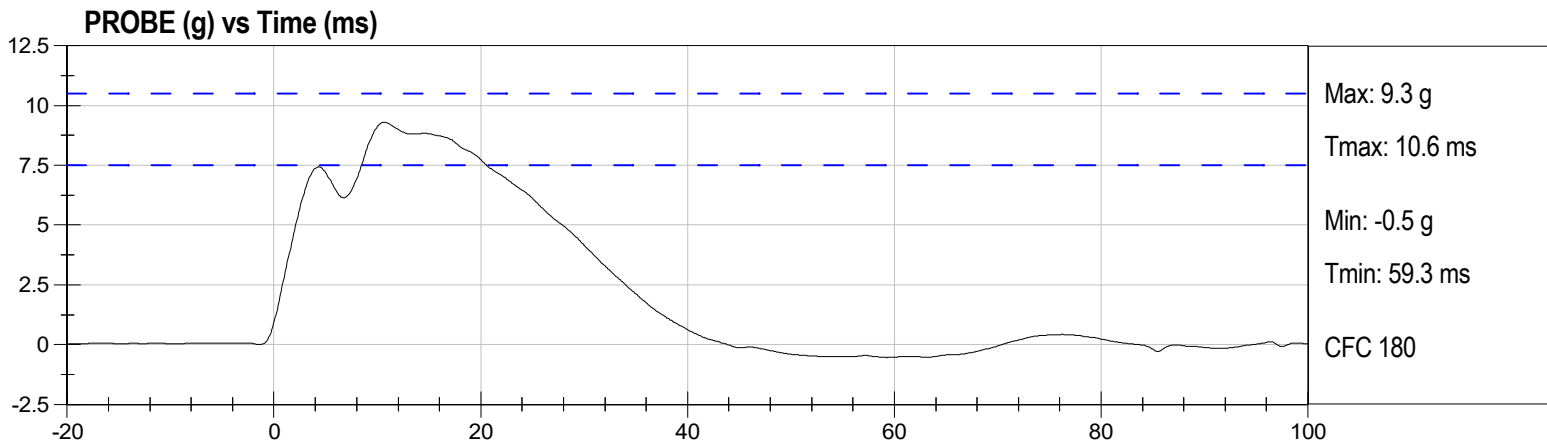


Shoulder Impact Test
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252323
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.2 to 4.4	4.2	Pass
Peak Probe Acceleration	G's	7.5 to 10.5	9.3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025



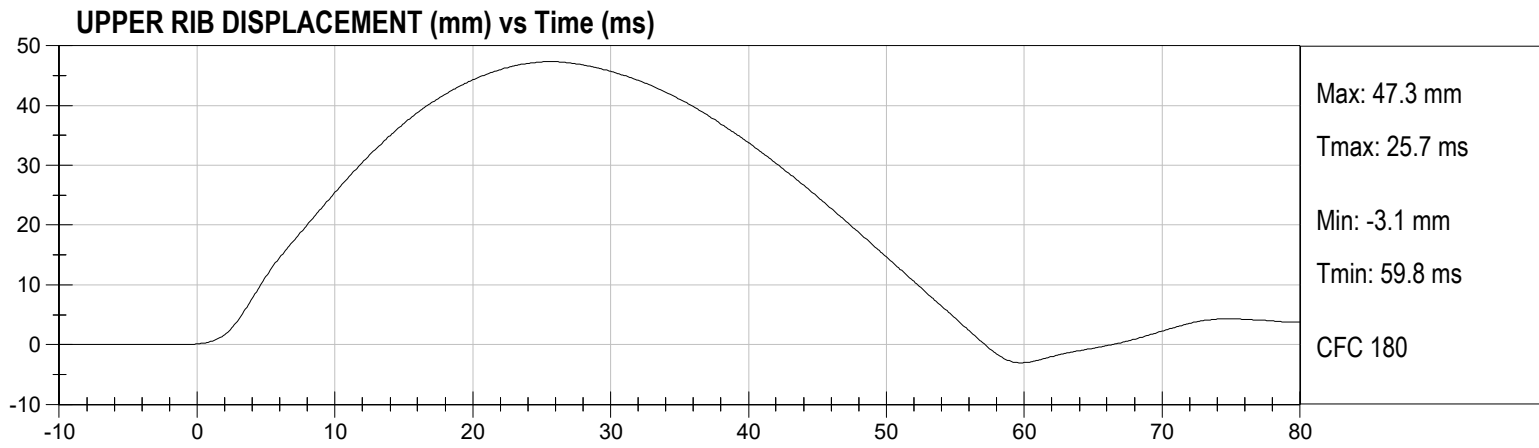


Upper Rib Drop Test - 815mm
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252324H
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Rib Deflection at 815 mm	mm	46 to 51	47.3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
UPPER RIB DISPLACEMENT	Honeywell	G236	05/15/2025	11/14/2025



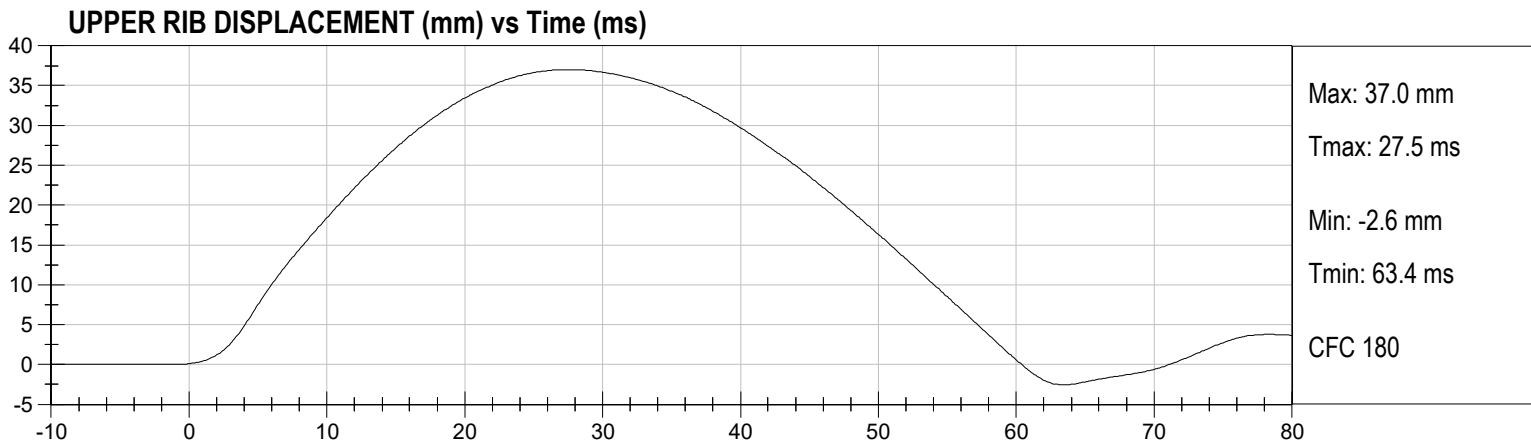


Upper Rib Drop Test - 459mm
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252324L
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Rib Deflection at 459 mm	mm	36 to 40	37.0	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
UPPER RIB DISPLACEMENT	Honeywell	G236	05/15/2025	11/14/2025



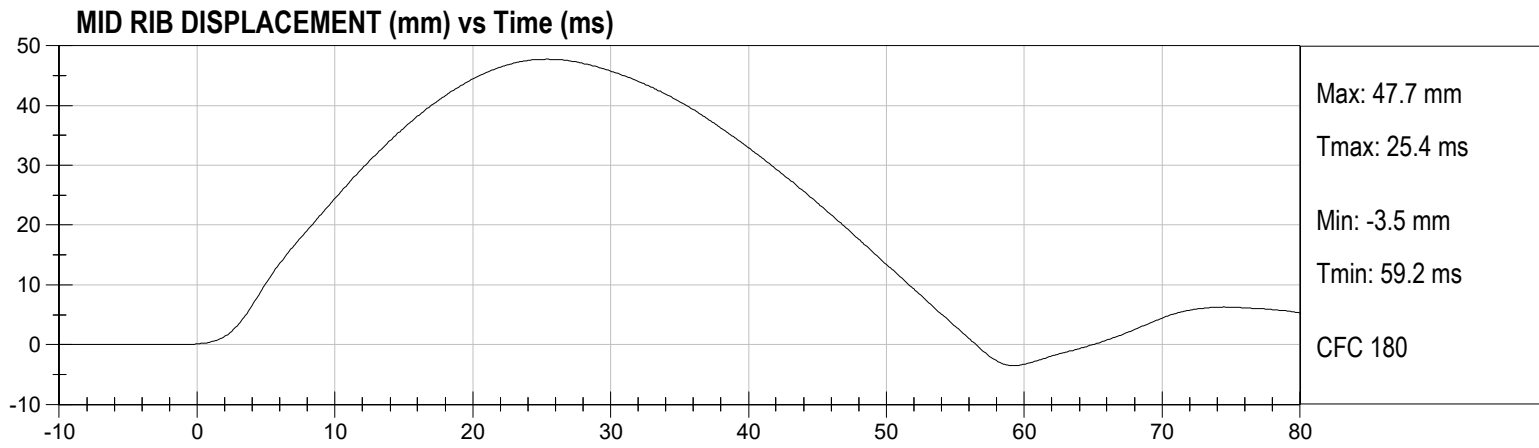


Middle Rib Drop Test - 815mm
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252325H
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Rib Deflection at 815 mm	mm	46 to 51	47.7	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
MID RIB DISPLACEMENT	Honeywell	G368	05/15/2025	11/14/2025



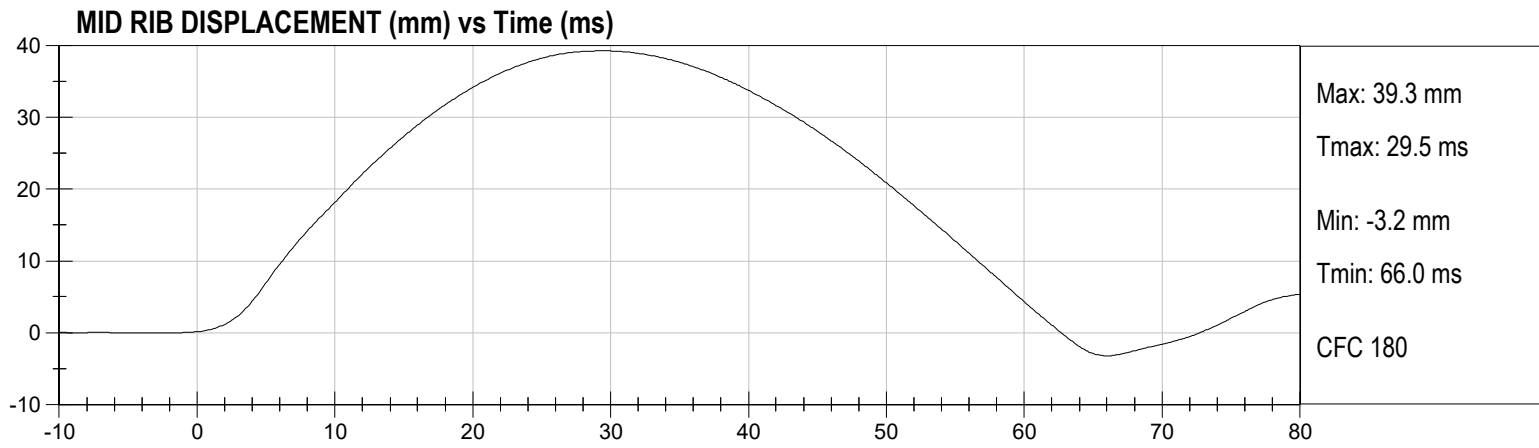


Middle Rib Drop Test - 459mm
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252325L
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Rib Deflection at 459 mm	mm	36 to 40	39.3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
MID RIB DISPLACEMENT	Honeywell	G368	05/15/2025	11/14/2025



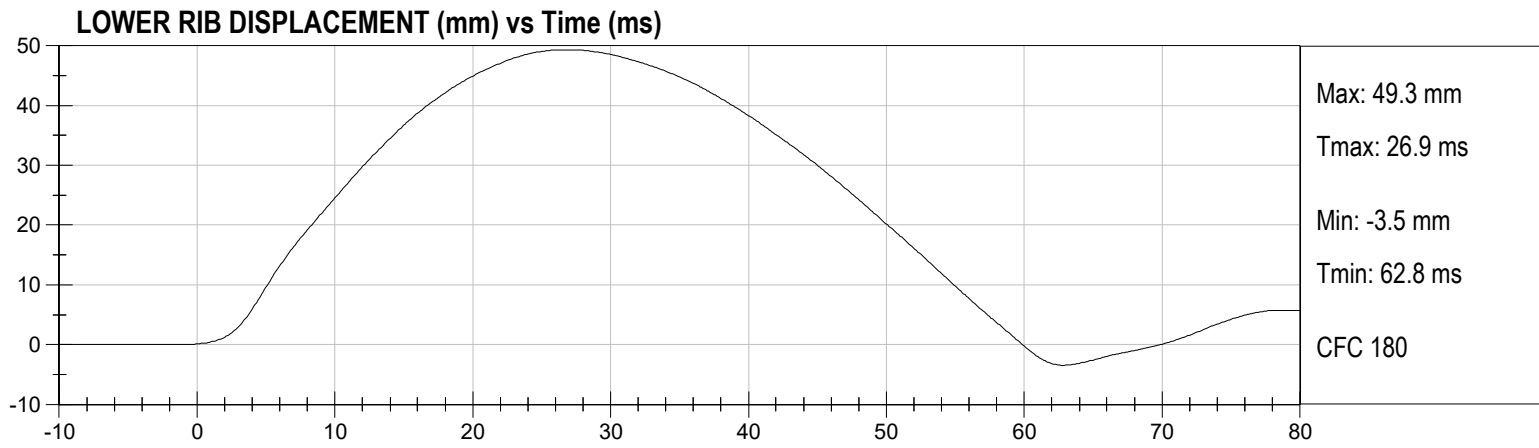


Lower Rib Drop Test - 815mm
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252326H
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Rib Deflection at 815 mm	mm	46 to 51	49.3	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
LOWER RIB DISPLACEMENT	Honeywell	G164	05/15/2025	11/14/2025



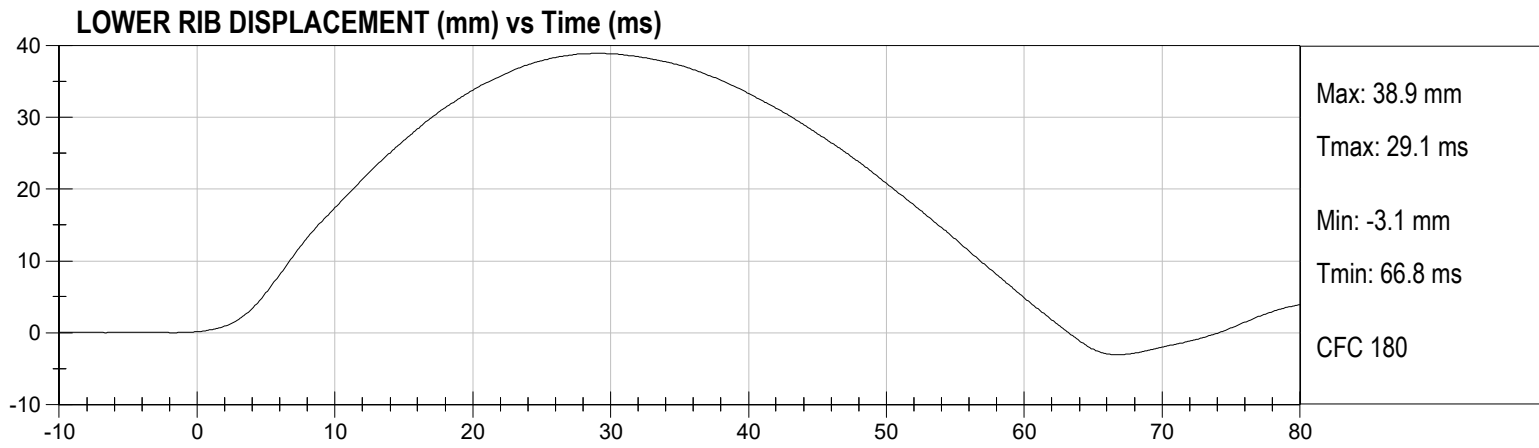


Lower Rib Drop Test - 459mm
ES2re
ATD Serial No: F032

Test Date: 08/07/2025
Test ID: D252326L
Test Technician: Jonah Pulokas

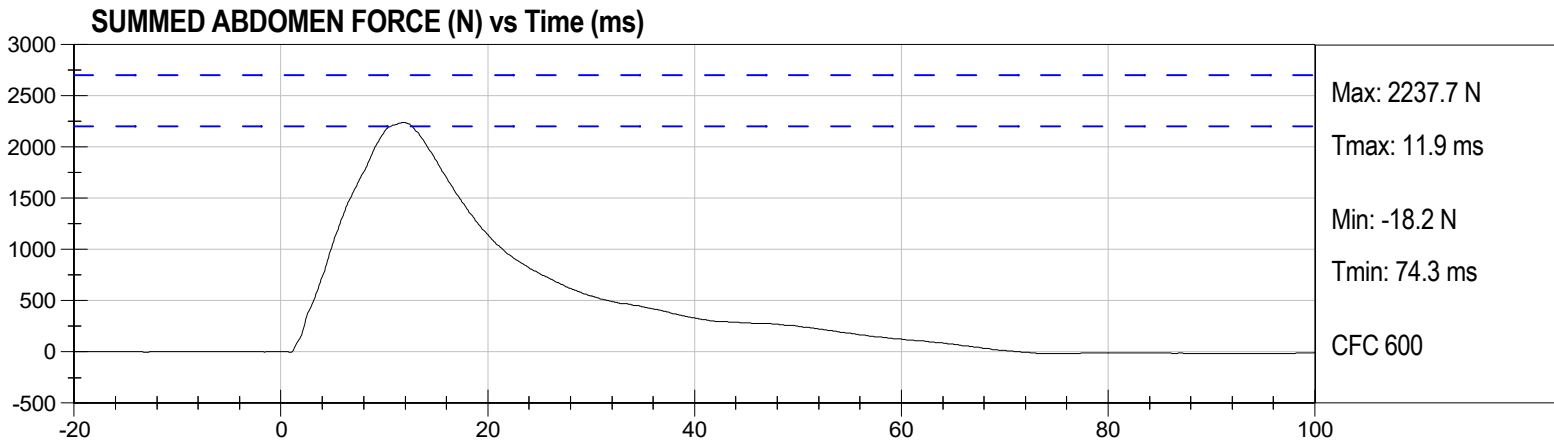
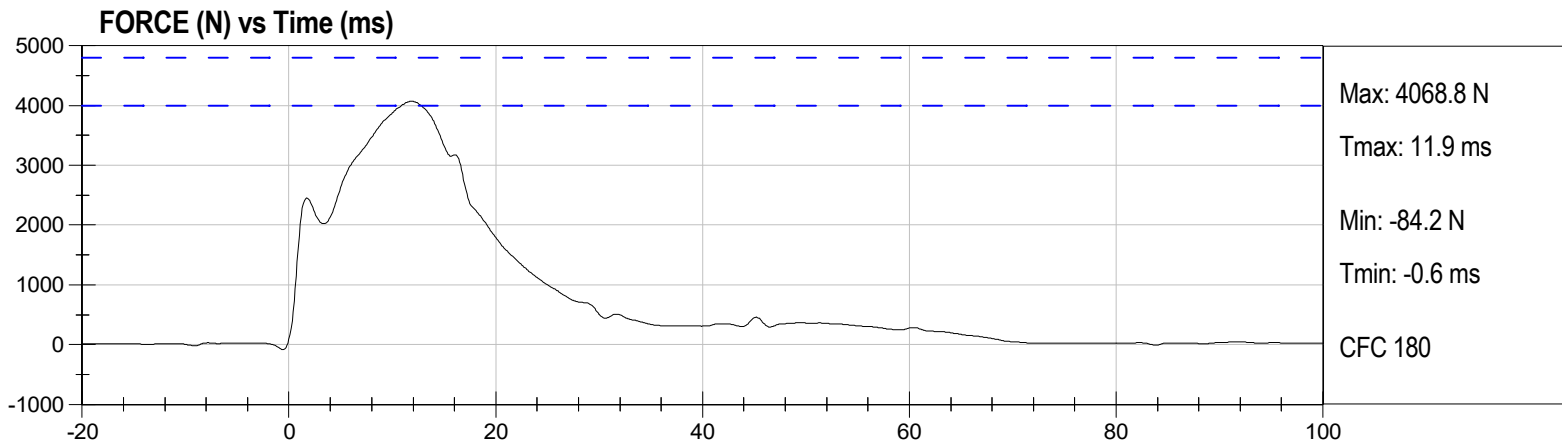
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Rib Deflection at 459 mm	mm	36 to 40	38.9	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
LOWER RIB DISPLACEMENT	Honeywell	G164	05/15/2025	11/14/2025

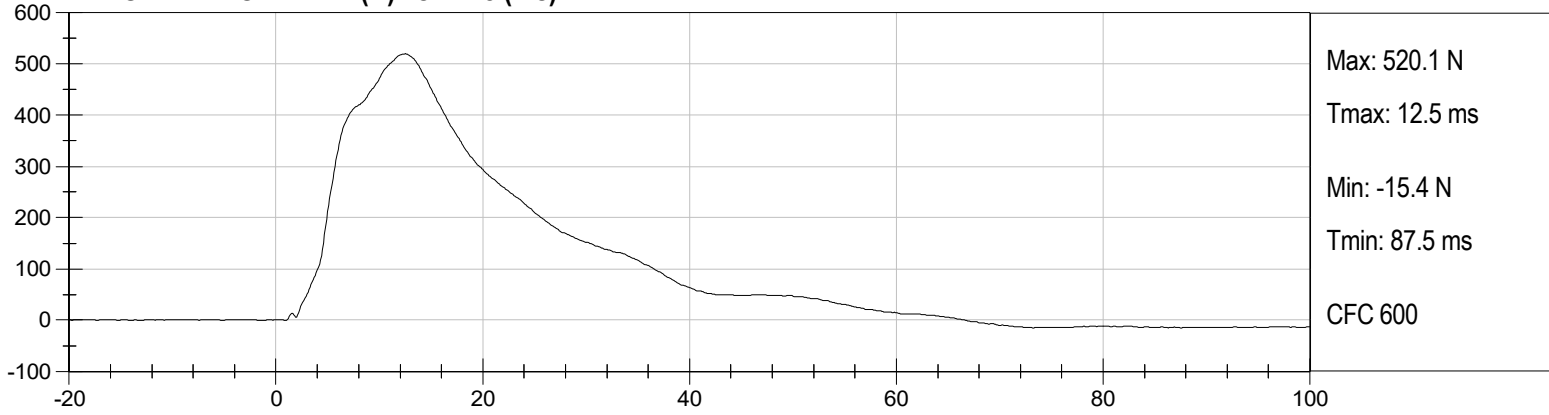


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	3.9 to 4.1	4.0	Pass
Peak Probe Force	N	4000 to 4800	4069	Pass
Time of Peak Probe Force	ms	10.6 to 13.0	11.9	Pass
Peak Abdomen Force	N	2200 to 2700	2238	Pass
Time of Peak Abdomen Force	ms	10.0 to 12.3	11.9	Pass

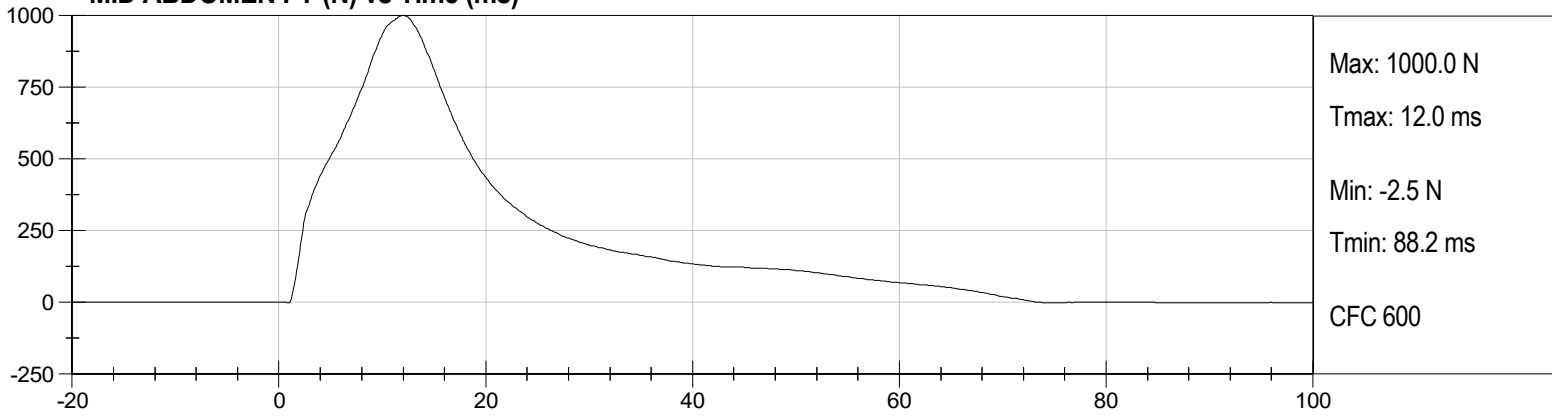
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
FRONT ABDOMEN FY	Denton	ABG1532FY	01/20/2025	1/20/2026
MID ABDOMEN FY	Denton	ABG1534FY	01/20/2025	1/20/2026
REAR ABDOMEN FY	Denton	ABG1535FY	01/20/2025	1/20/2026



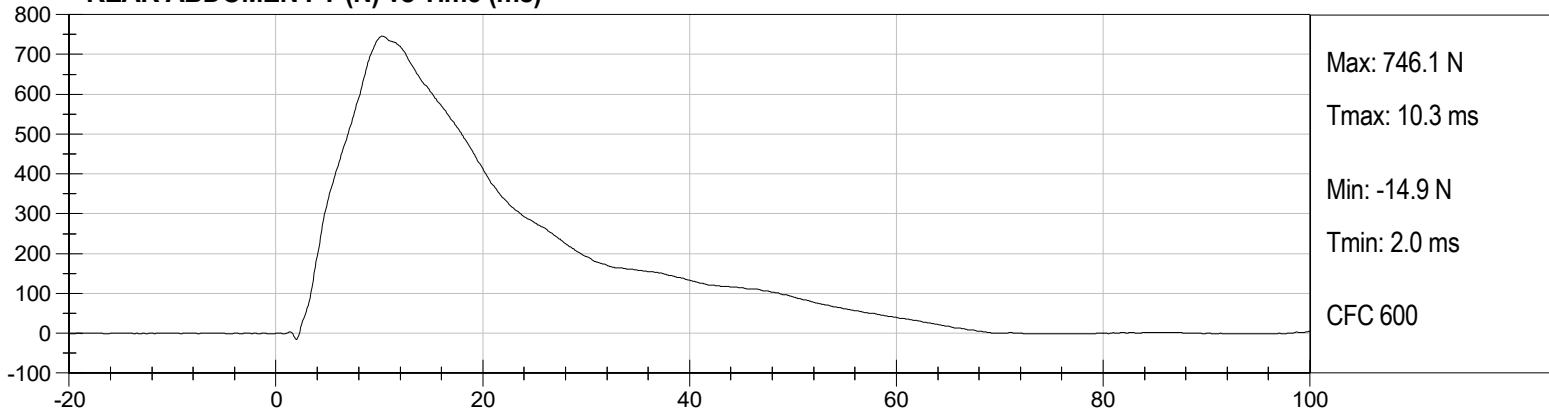
FRONT ABDOMEN FY (N) vs Time (ms)



MID ABDOMEN FY (N) vs Time (ms)

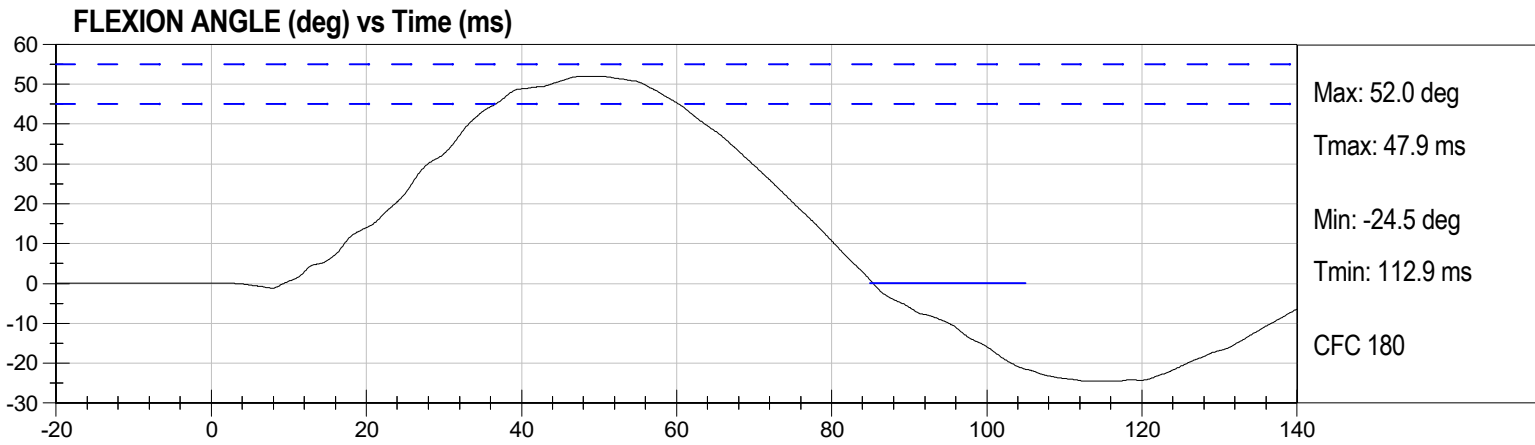
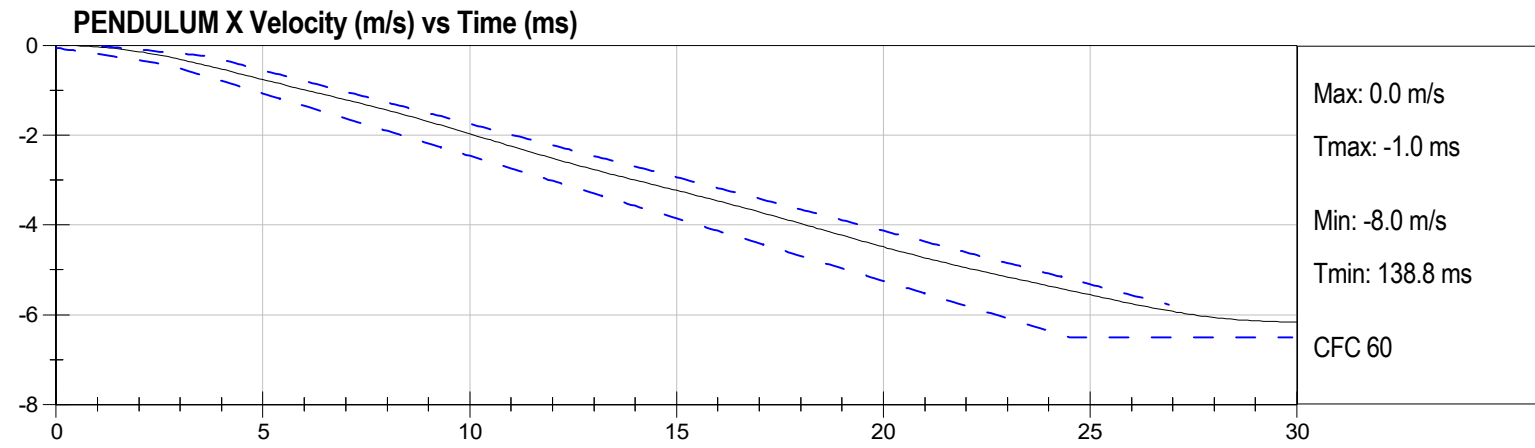


REAR ABDOMEN FY (N) vs Time (ms)

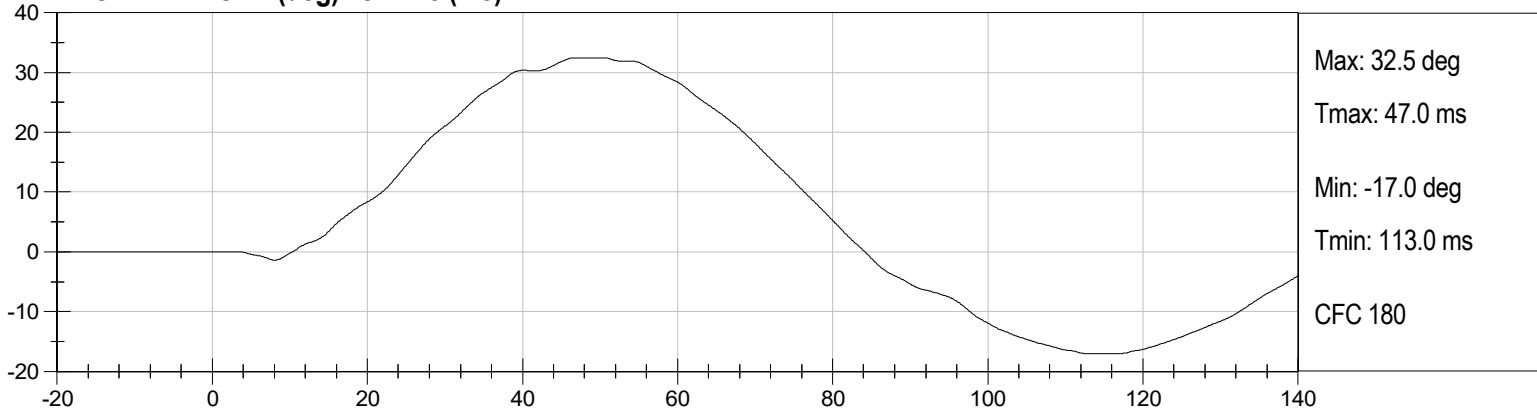


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	5.95 to 6.15	5.98	Pass
Pendulum Velocity Within Corridor	m/s	Within	Yes	Pass
Maximum Flexion Angle	deg	45 to 55	52	Pass
Time of Maximum Flexion Angle	ms	39 to 53	48	Pass
Decay Time to Zero Crossing from Peak	ms	37 to 57	38	Pass

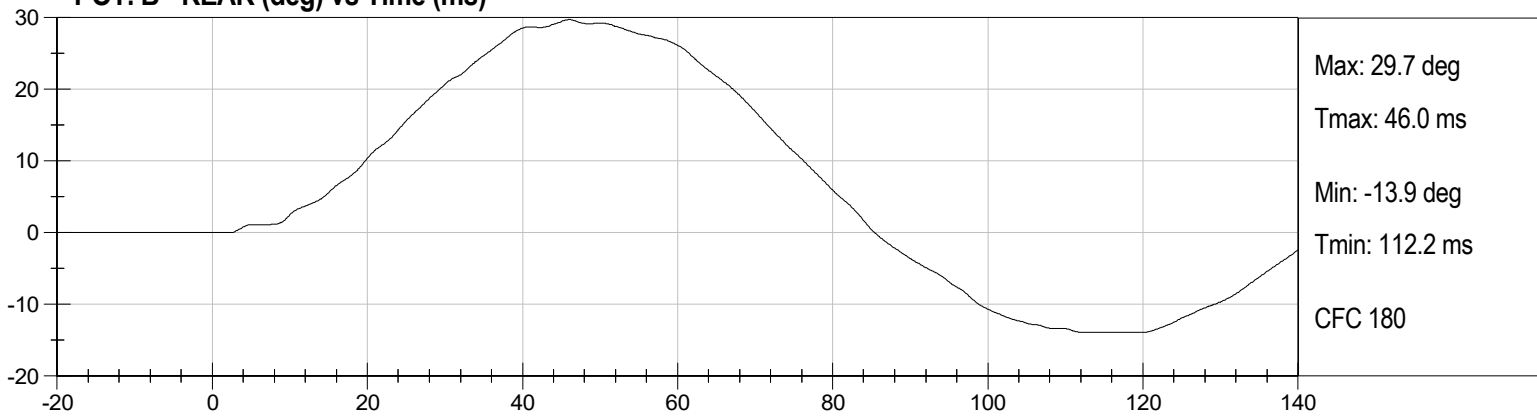
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PEND. ACCEL.	Endevco	C19538	05/19/2025	11/18/2025
POT. B - REAR	Spectrol	025_es2	07/15/2025	1/14/2026
POT. A - FRONT	Spectrol	027_es2	07/15/2025	1/14/2026
POT. C - HEADFORM	Spectrol	028_es2	07/15/2025	1/14/2026



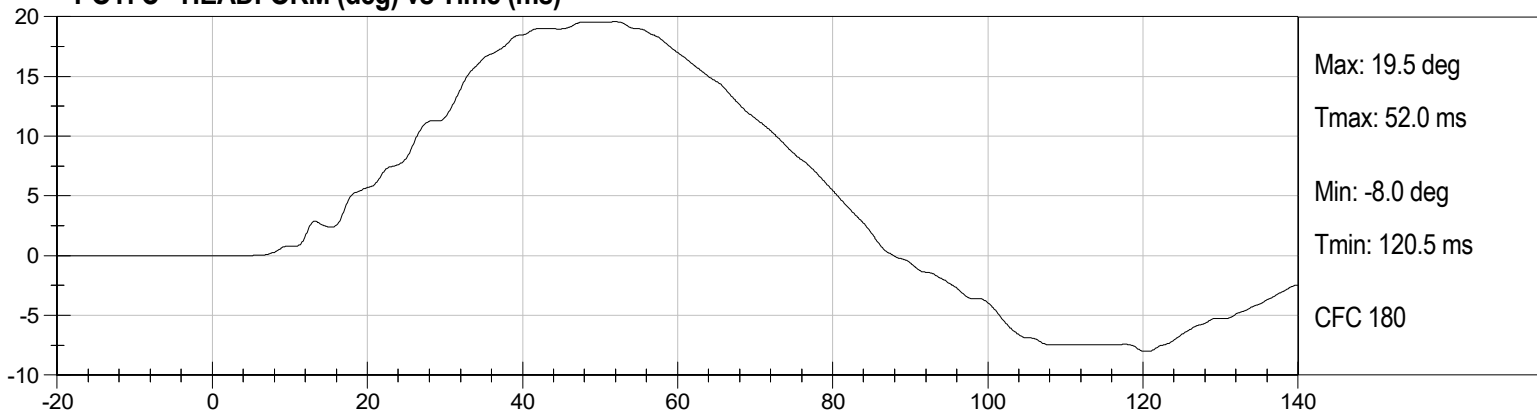
POT. A - FRONT (deg) vs Time (ms)



POT. B - REAR (deg) vs Time (ms)

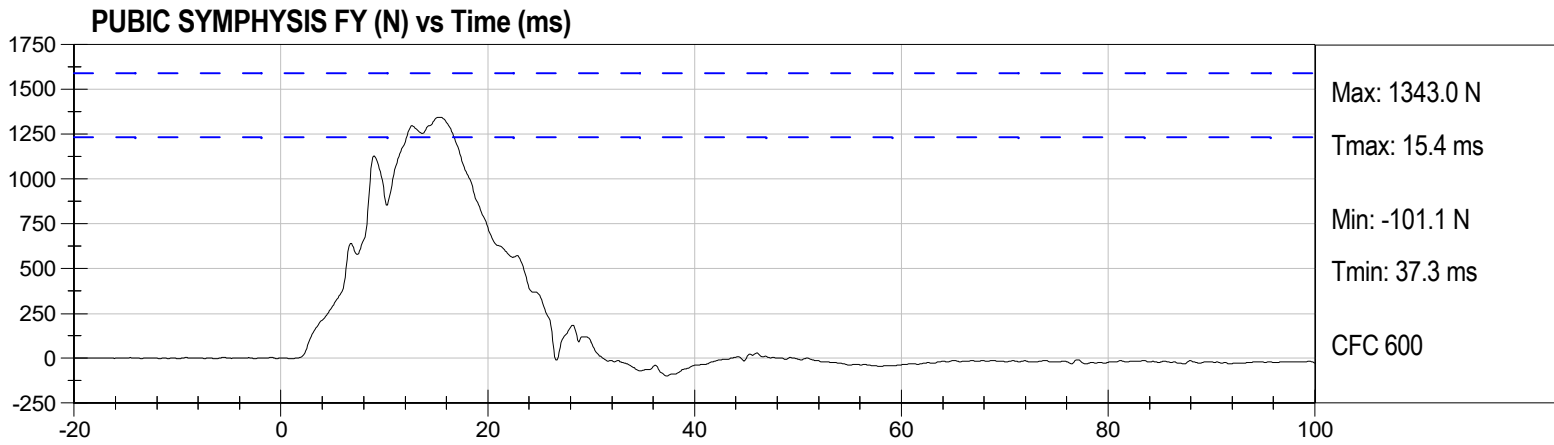
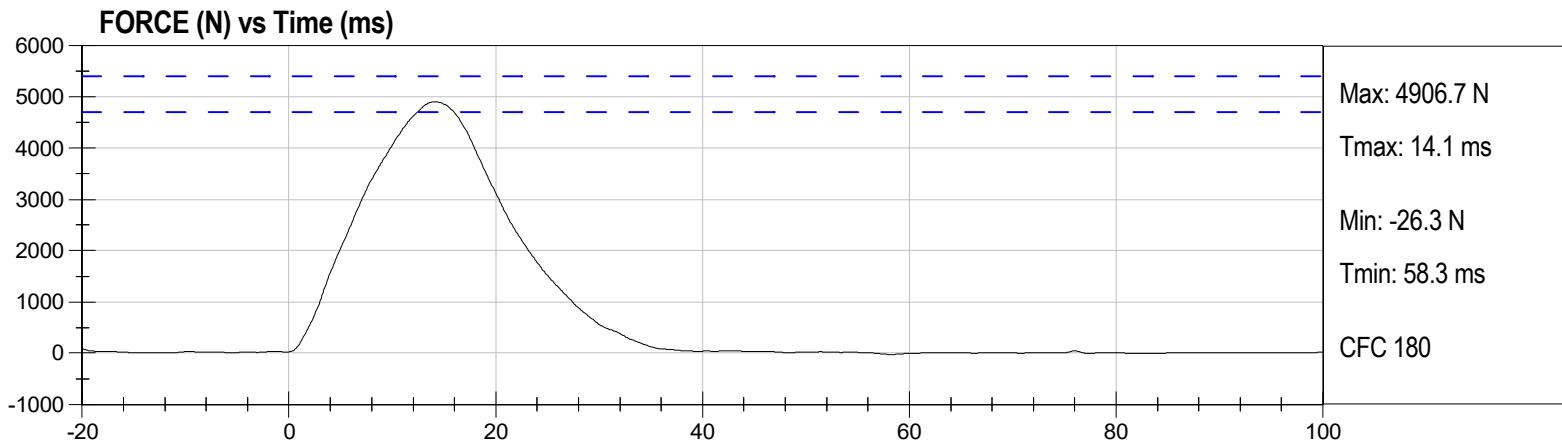


POT. C - HEADFORM (deg) vs Time (ms)



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	4.2 to 4.4	4.38	Pass
Peak Probe Force	N	4700 to 5400	4907	Pass
Time of Peak Probe Force	ms	11.8 to 16.1	14.1	Pass
Peak Pubic Force	N	1230 to 1590	1343	Pass
Time of Peak Pubic Force	ms	12.2 to 17.0	15.4	Pass

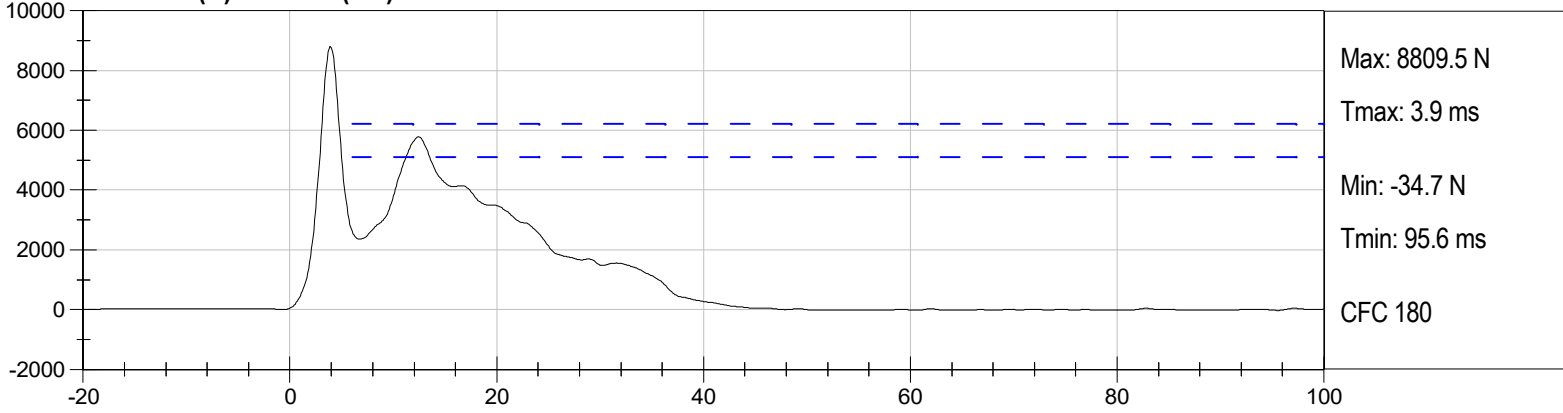
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
PUBIC SYMPHYSIS FY	Denton	PG461FY	01/20/2025	1/20/2026



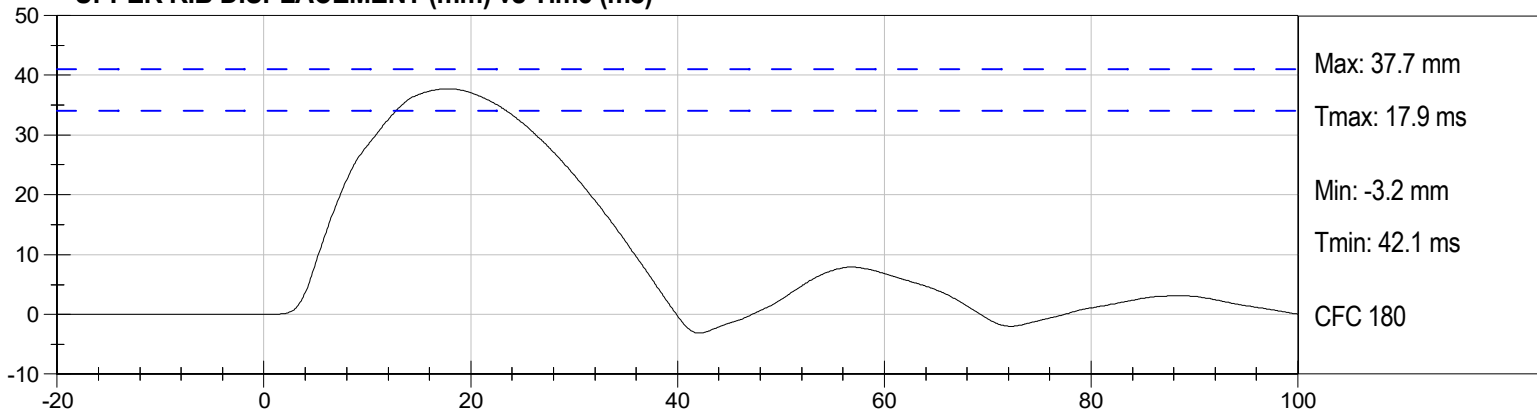
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	5.4 to 5.6	5.40	Pass
Peak Probe Force after 6 ms	N	5100 to 6200	5778	Pass
Maximum Upper Thorax Rib Displacement	mm	34 to 41	37.7	Pass
Maximum Middle Thorax Rib Displacement	mm	37 to 45	39.3	Pass
Maximum Lower Thorax Rib Displacement	mm	37 to 44	38.5	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER RIB DISPLACEMENT	Honeywell	G236	05/15/2025	11/14/2025
MID RIB DISPLACEMENT	Honeywell	G368	05/15/2025	11/14/2025
LOWER RIB DISPLACEMENT	Honeywell	G164	05/15/2025	11/14/2025

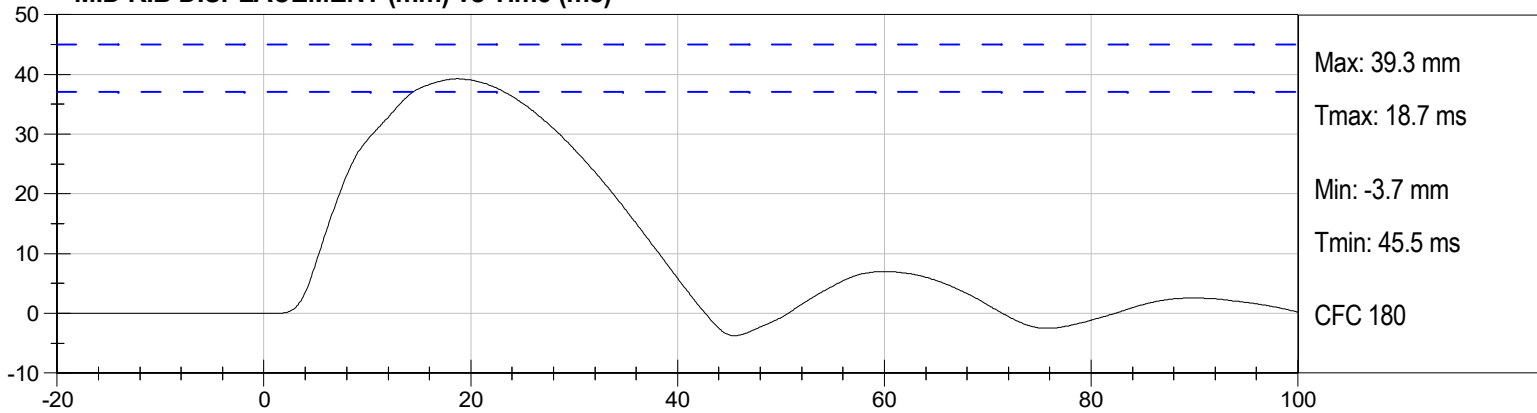
FORCE (N) vs Time (ms)



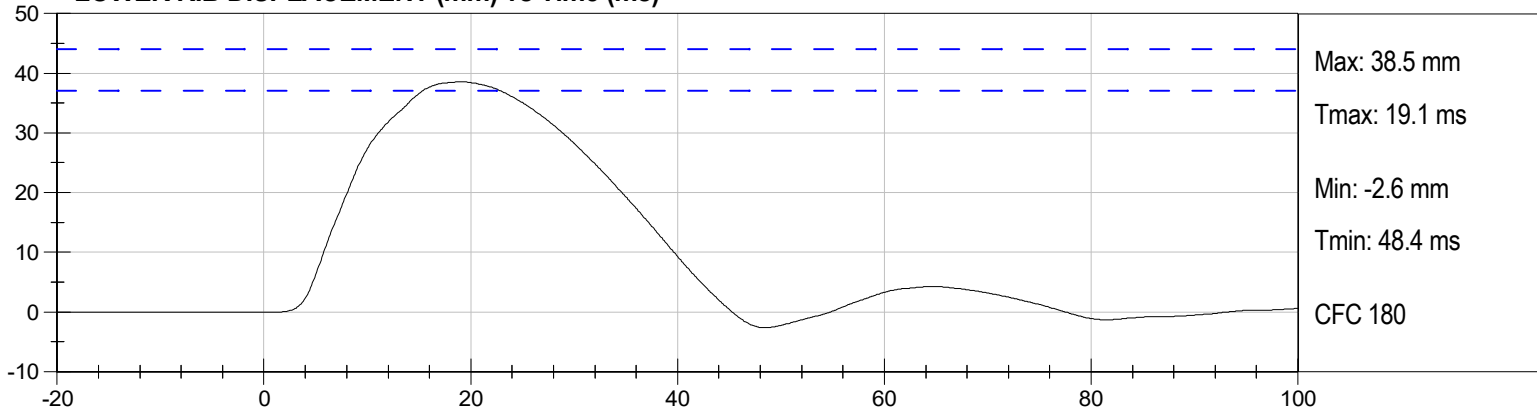
UPPER RIB DISPLACEMENT (mm) vs Time (ms)



MID RIB DISPLACEMENT (mm) vs Time (ms)



LOWER RIB DISPLACEMENT (mm) vs Time (ms)



QUALIFICATION TEST RESULTS

PRE-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

SID-IIsD External Measurements
SN: 306

No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	785	Pass
B	Shoulder Pivot Height	437 - 453	449	Pass
C	H-point Height	79 - 89	86	Pass
D	H-point from Seatback	141 - 151	147	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	120	Pass
G	Head Breadth	140 - 148	141	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	182	Pass
J	Head Circumference	541 - 551	550	Pass
K	Buttock to Knee Length	514 - 540	538	Pass
L	Popliteal Height	343 - 369	349	Pass
M	Knee Pivot to Floor Height	392 - 409	394	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	198	Pass
P	Foot Length	216 - 232	222	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	317	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	483	Pass
V	Shoulder Width	341 - 357	351	Pass
W	Foot Width	78 - 94	82	Pass
Y	Chest Circumference w/ jacket	851 - 881	863	Pass
Z	Waist Circumference	761 - 791	782	Pass

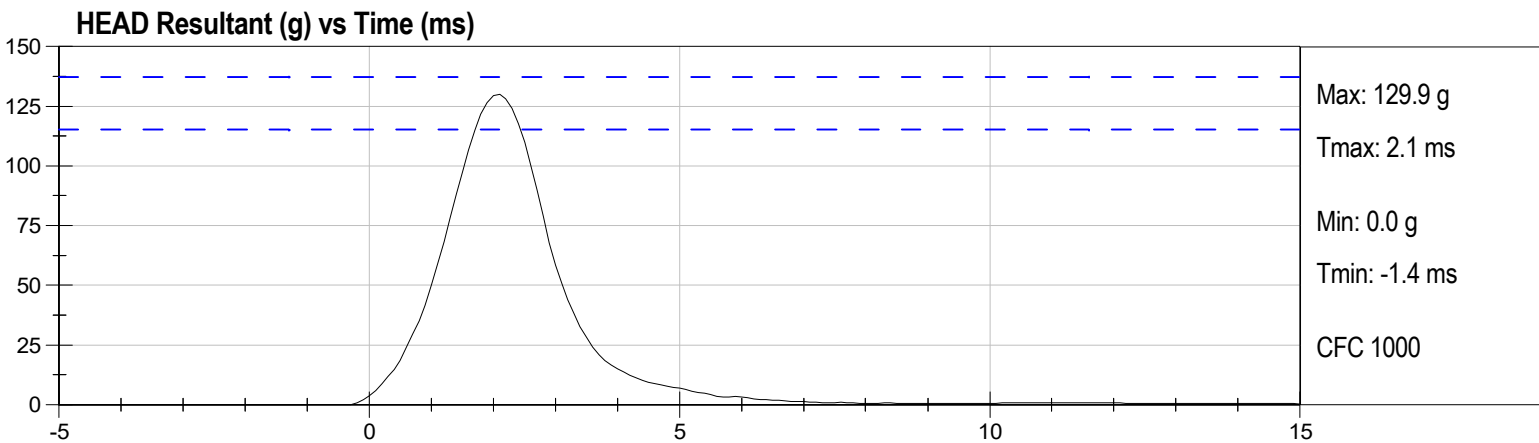
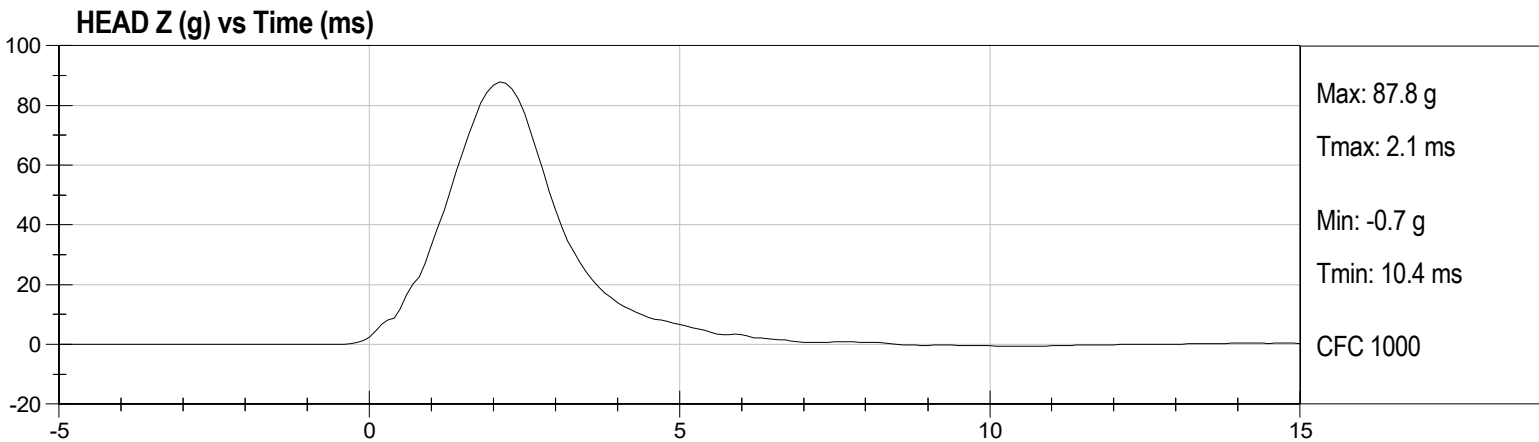
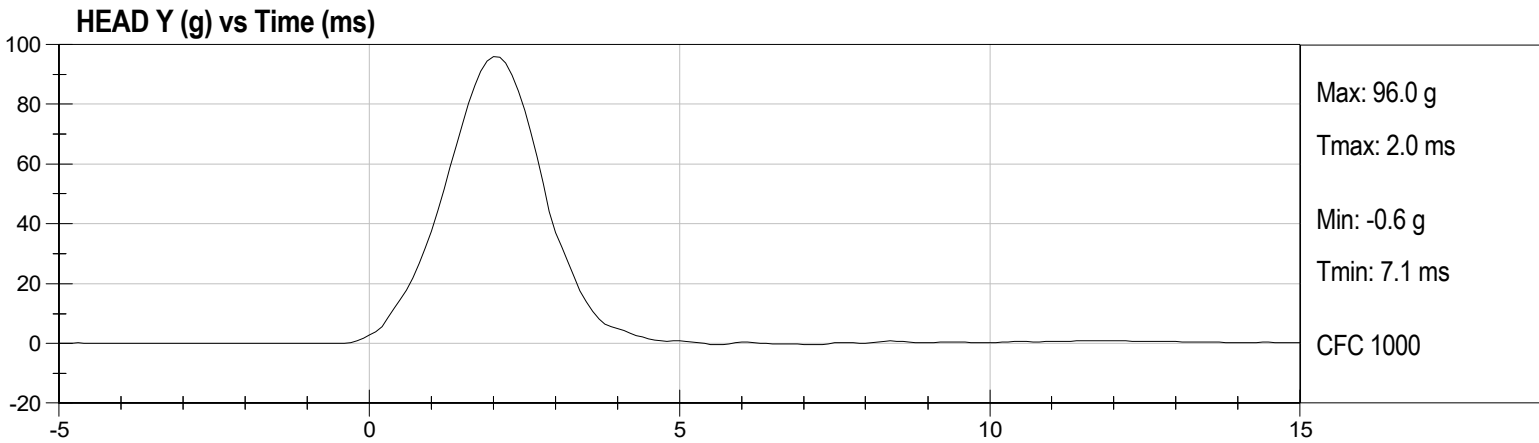
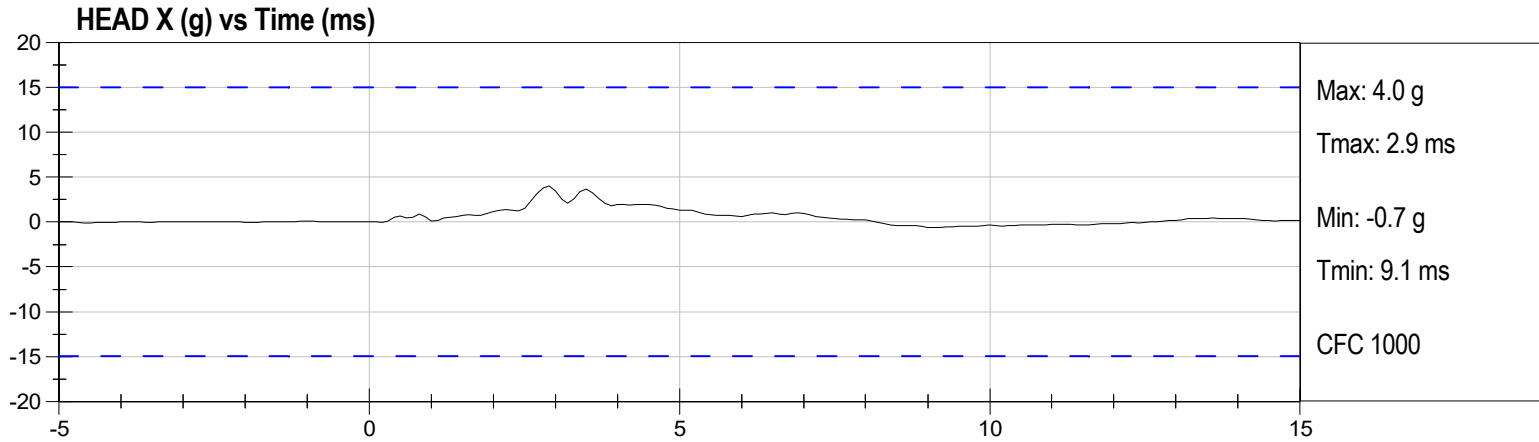


Lateral Head Drop Test
SID IIs
ATD Serial No: 306

Test Date: 07/16/2025
Test ID: D252051
Test Technician: Brian Lucas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Peak Resultant Acceleration	g	115 to 137	130	Pass
Peak Longitudinal Acceleration	g	-15.0 to 15.0	4.0	Pass
Unimodal	%	within 15% of peak	3	Pass

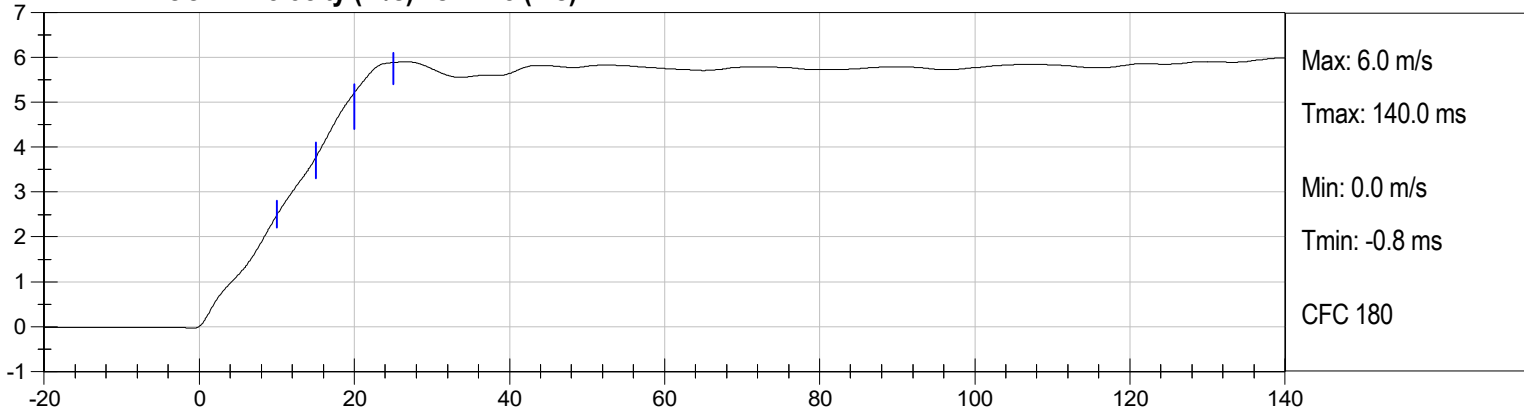
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
HEAD Y	Endevco	T30974	05/27/2025	11/26/2025
HEAD X	Endevco	T30975	05/27/2025	11/26/2025
HEAD Z	Endevco	T30976	05/27/2025	11/26/2025



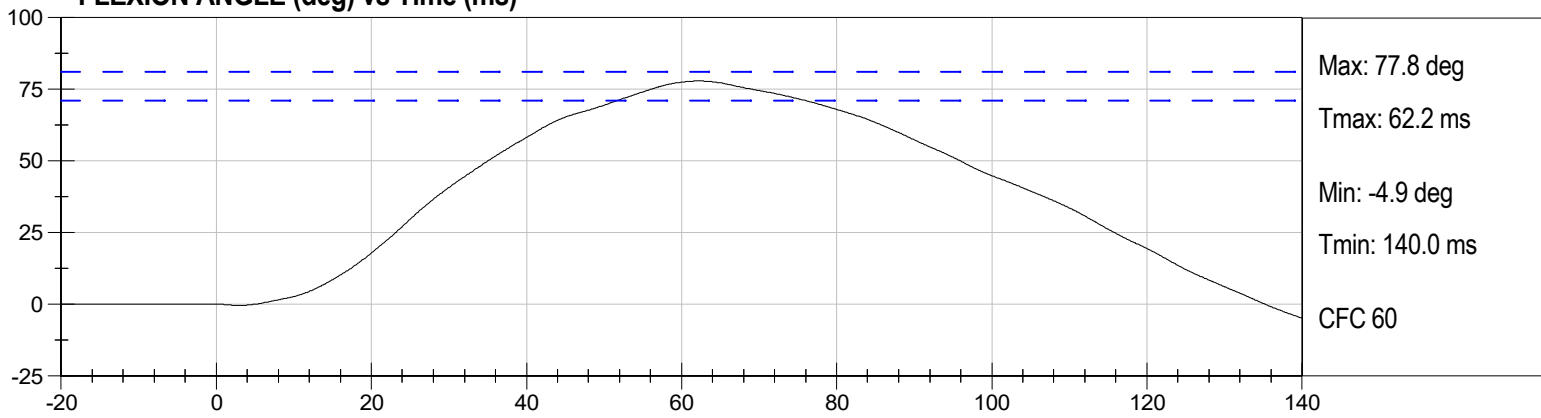
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	5.51 to 5.63	5.60	Pass
Pendulum Velocity at 10 ms	m/s	2.20 to 2.80	2.46	Pass
Pendulum Velocity at 15 ms	m/s	3.30 to 4.10	3.73	Pass
Pendulum Velocity at 20 ms	m/s	4.40 to 5.40	5.19	Pass
Pendulum Velocity at 25 ms	m/s	5.40 to 6.10	5.88	Pass
Peak Pendulum Velocity from 25 to 100 ms	m/s	5.50 to 6.20	5.90	Pass
Maximum "D" Plane Rotation	deg	71 to 81	78	Pass
Time of Maximum "D" Plane Rotation	ms	50 to 70	62	Pass
Maximum Moment About Occipital Condyle	Nm	-44 to -36	-40	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	07/09/2025	1/8/2026
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	07/16/2025	1/15/2026
POT. C - HEADFORM	Servo	2204	07/16/2025	1/15/2026

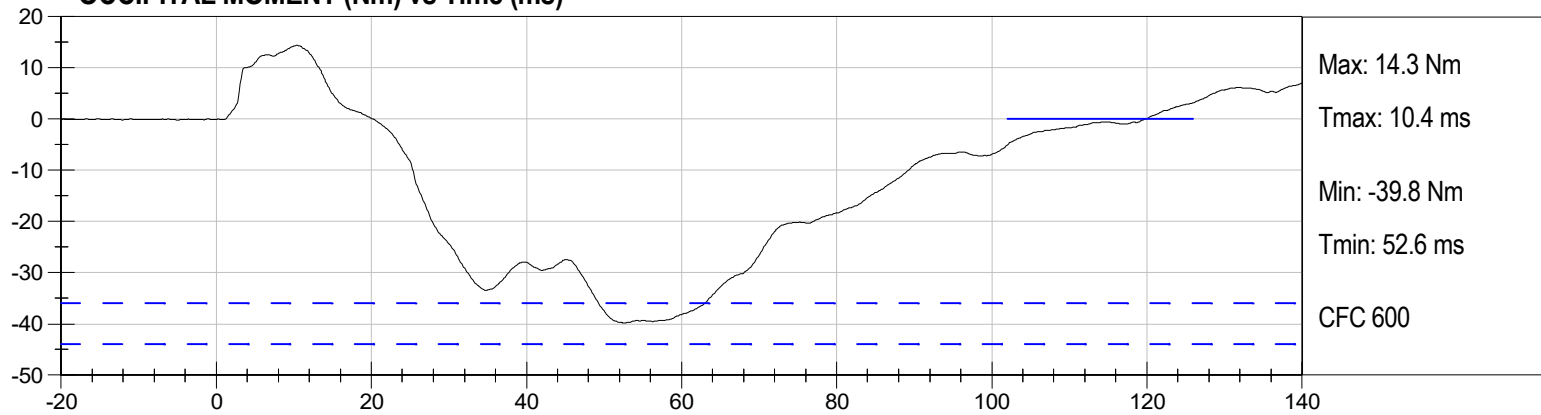
PEND. ACCEL. Velocity (m/s) vs Time (ms)



FLEXION ANGLE (deg) vs Time (ms)

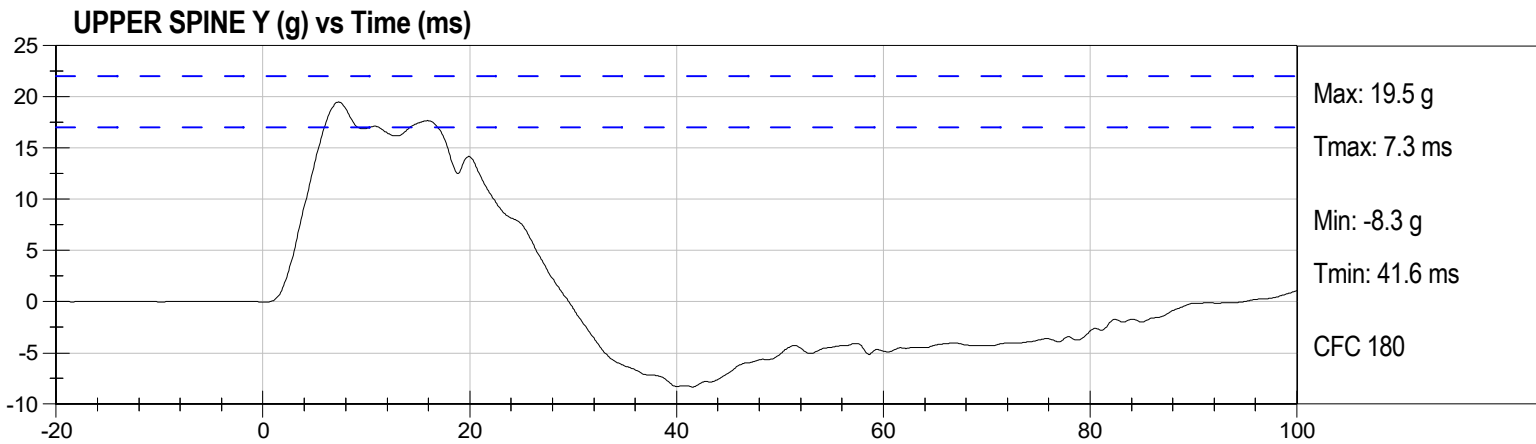
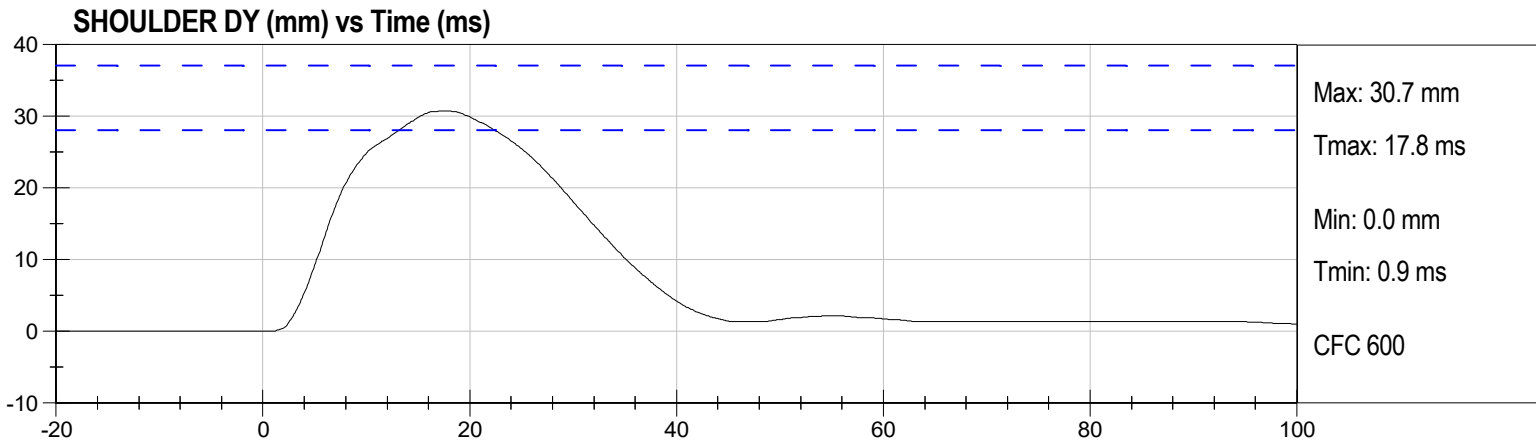
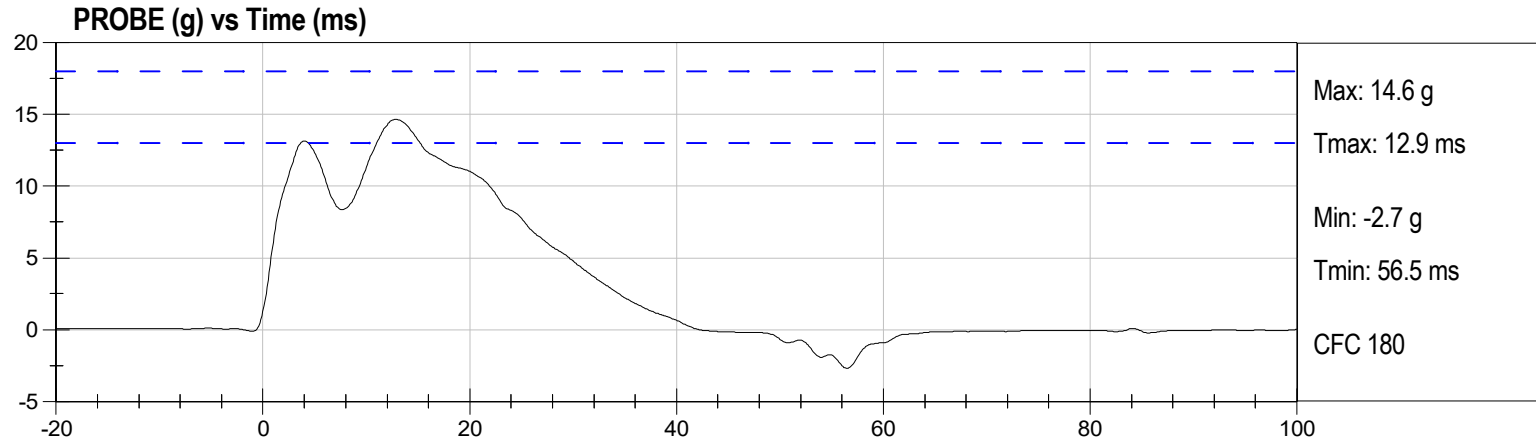


OCCIPITAL MOMENT (Nm) vs Time (ms)



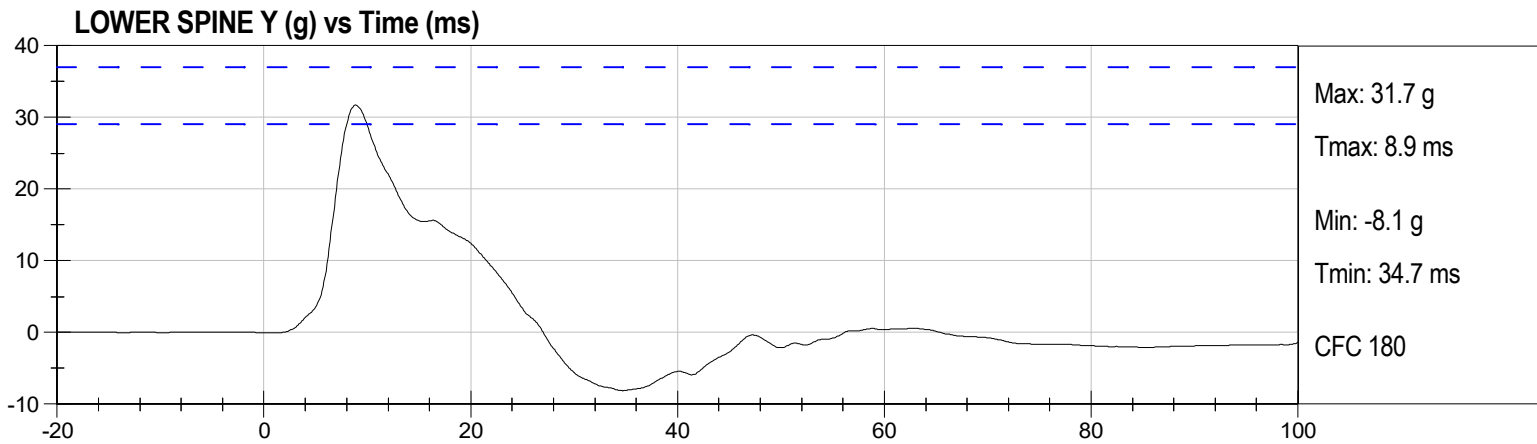
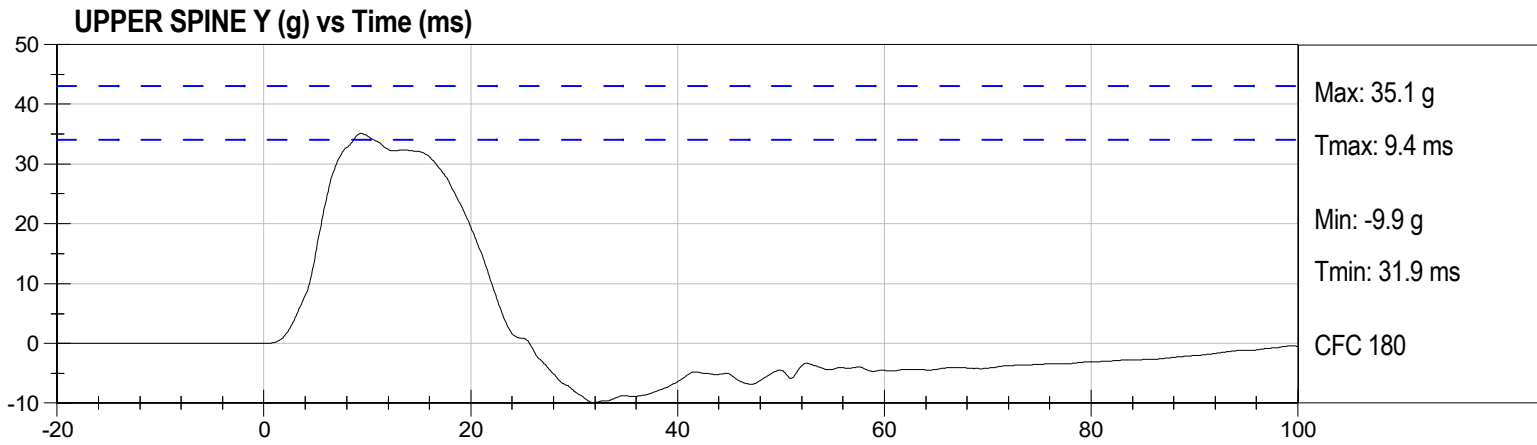
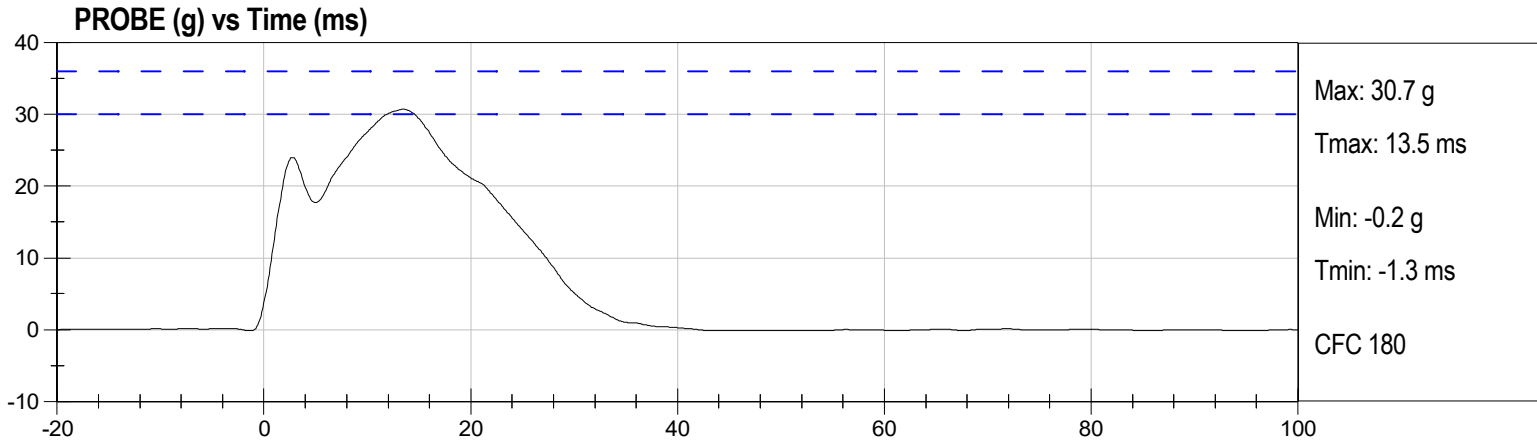
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	4.2 to 4.4	4.38	Pass
Peak Probe Acceleration	g	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	31	Pass
Upper Spine (T1) Y Acceleration	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	P82319	05/27/2025	11/26/2025
SHOULDER DY	FTSS	G050	05/28/2025	11/27/2025

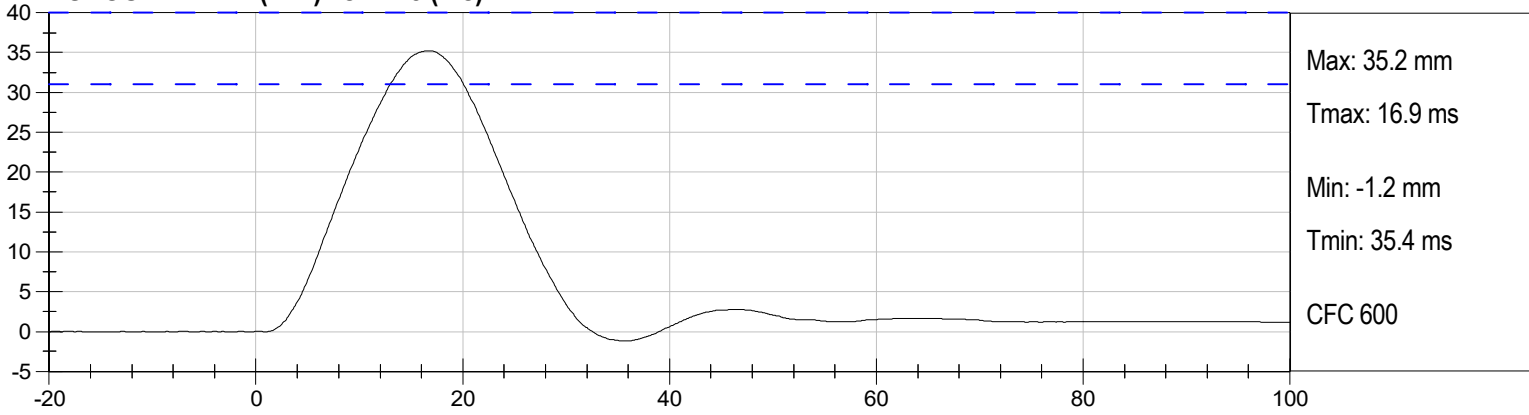


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration after 5 ms	g	30 to 36	31	Pass
Upper Spine (T1) Y Acceleration	g	34 to 43	35	Pass
Lower Spine (T12) Y Acceleration	g	29 to 37	32	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	34	Pass
Lower Thorax Rib Displacement	mm	32 to 38	37	Pass

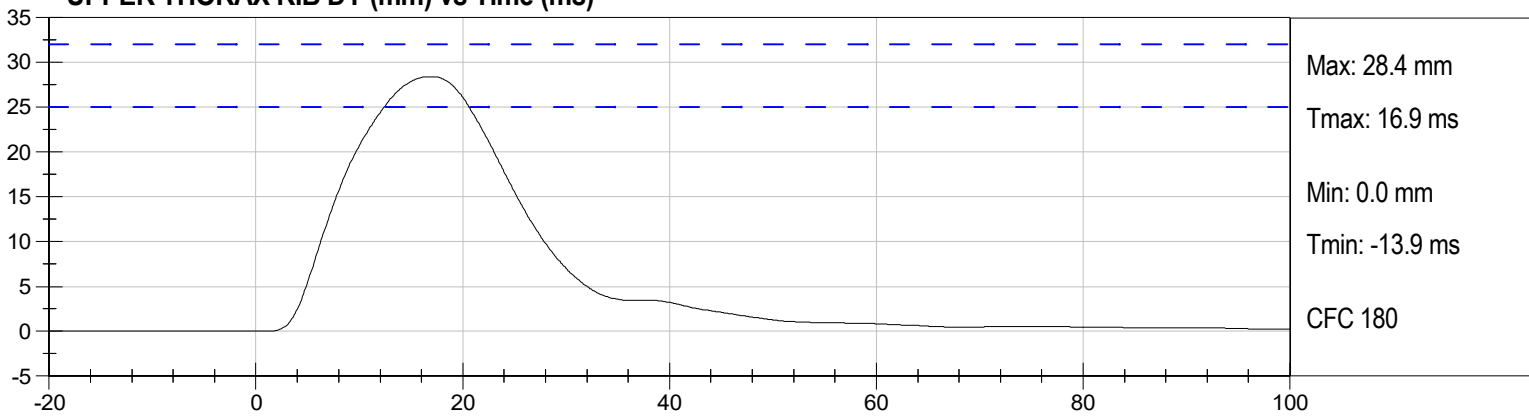
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P82319	05/27/2025	11/26/2025
LOWER SPINE Y	Endevco	P96335	05/27/2025	11/26/2025
SHOULDER DY	FTSS	G050	05/28/2025	11/27/2025
UPPER THORAX RIB DY	FTSS	G033	05/28/2025	11/27/2025
MID THORAX RIB DY	Servo	G2403	05/28/2025	11/27/2025
LOWER THORAX RIB DY	FTSS	G1270	05/28/2025	11/27/2025



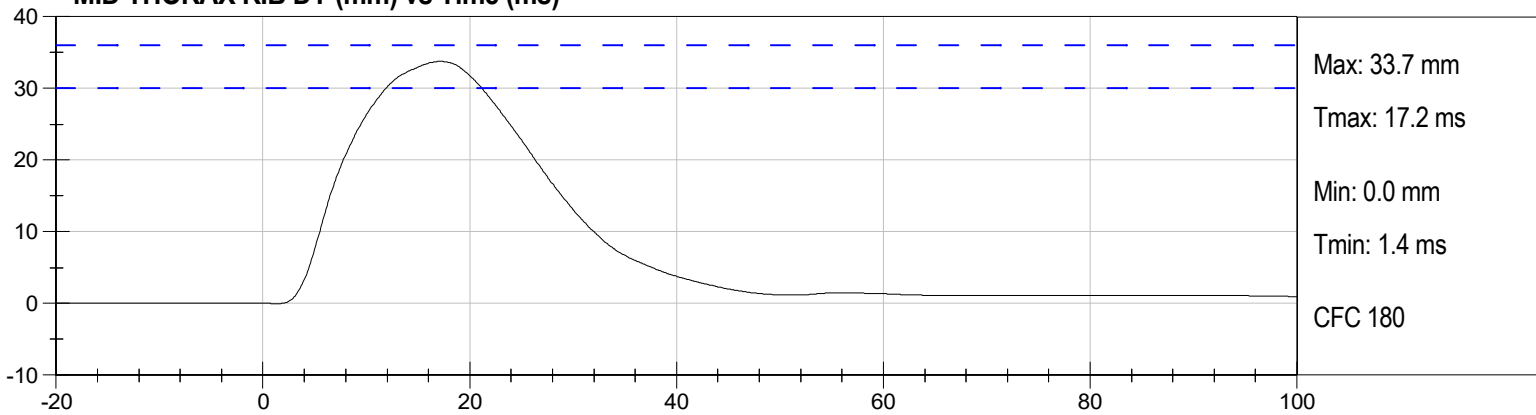
SHOULDER DY (mm) vs Time (ms)



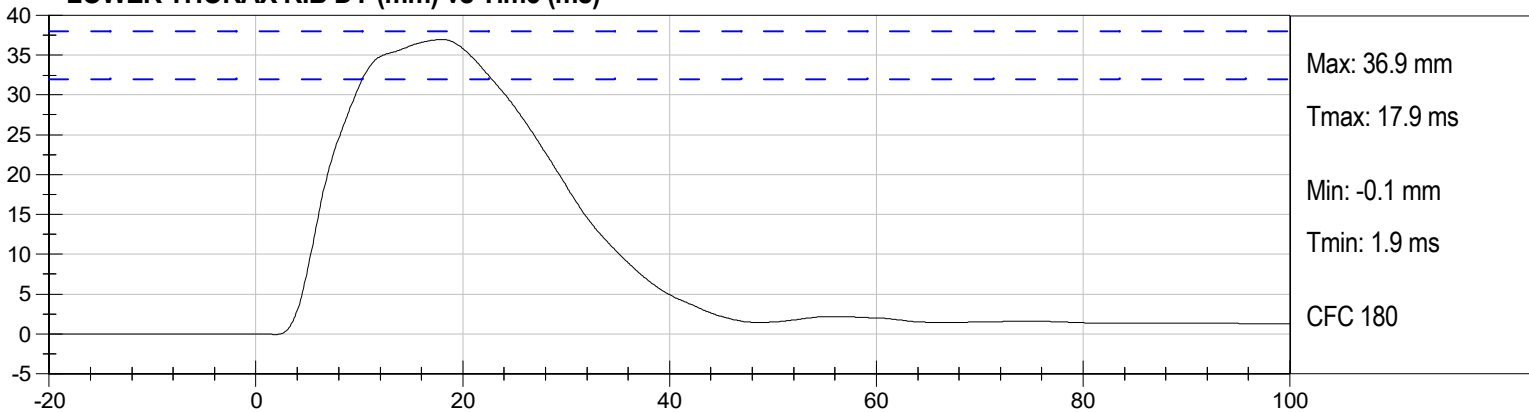
UPPER THORAX RIB DY (mm) vs Time (ms)



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

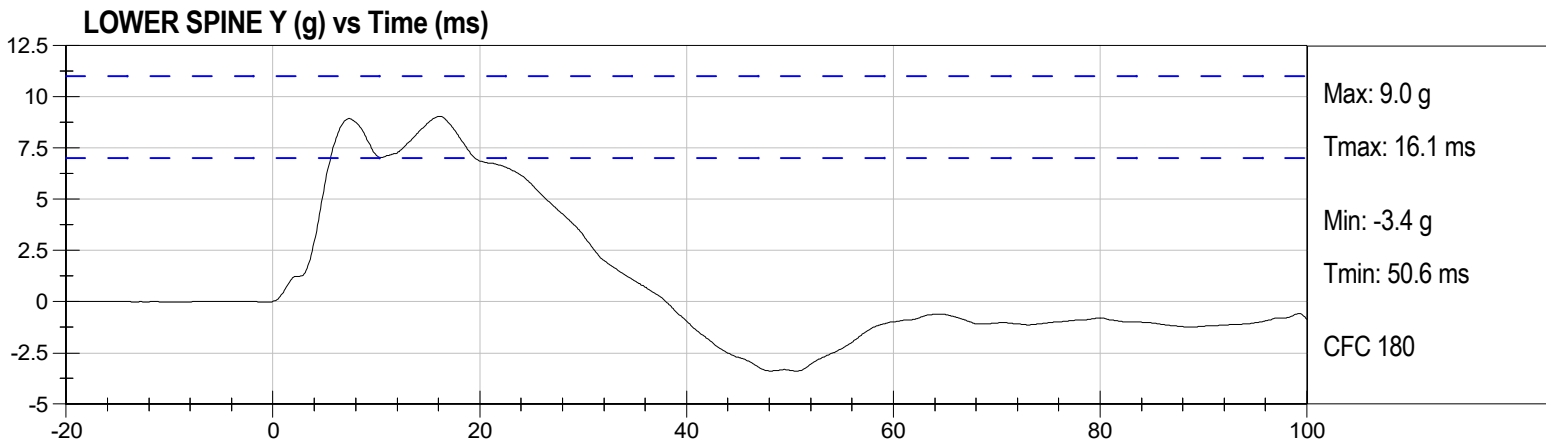
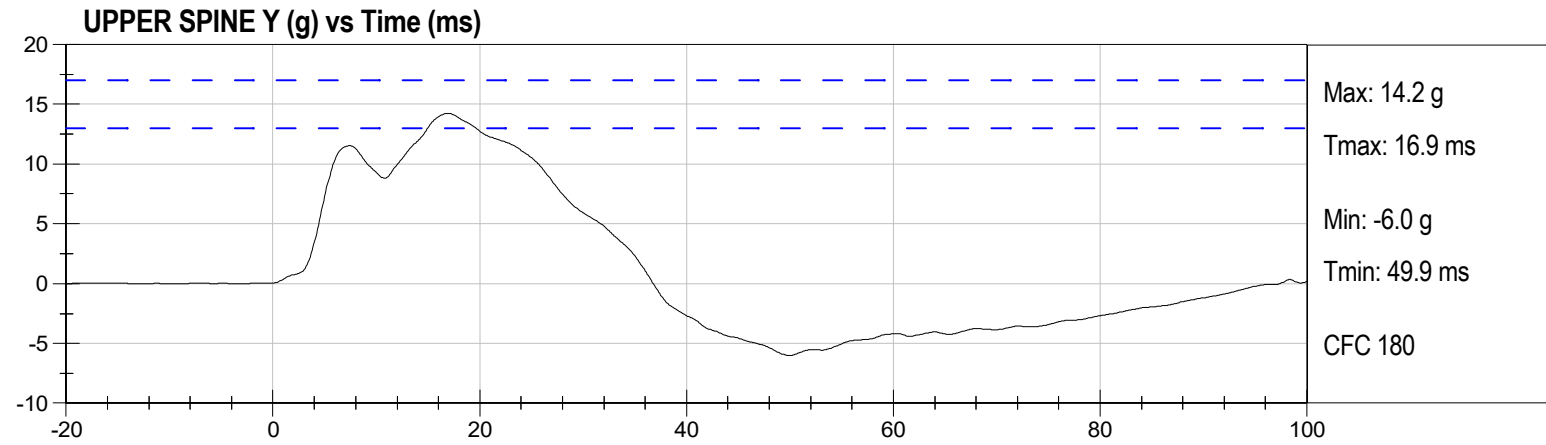
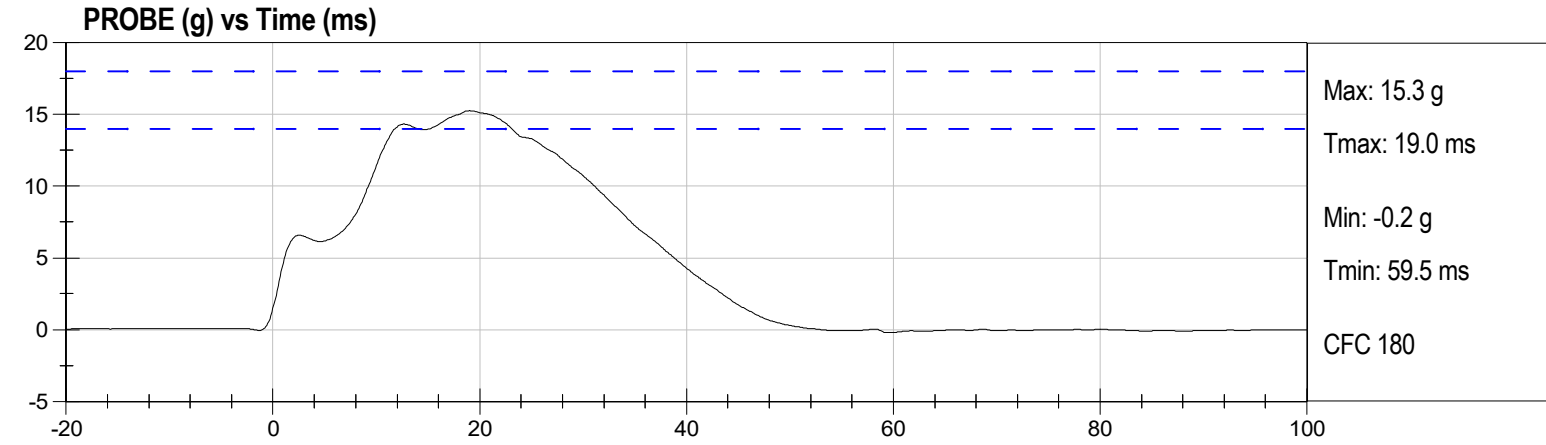


LOWER THORAX RIB DY (mm) vs Time (ms)

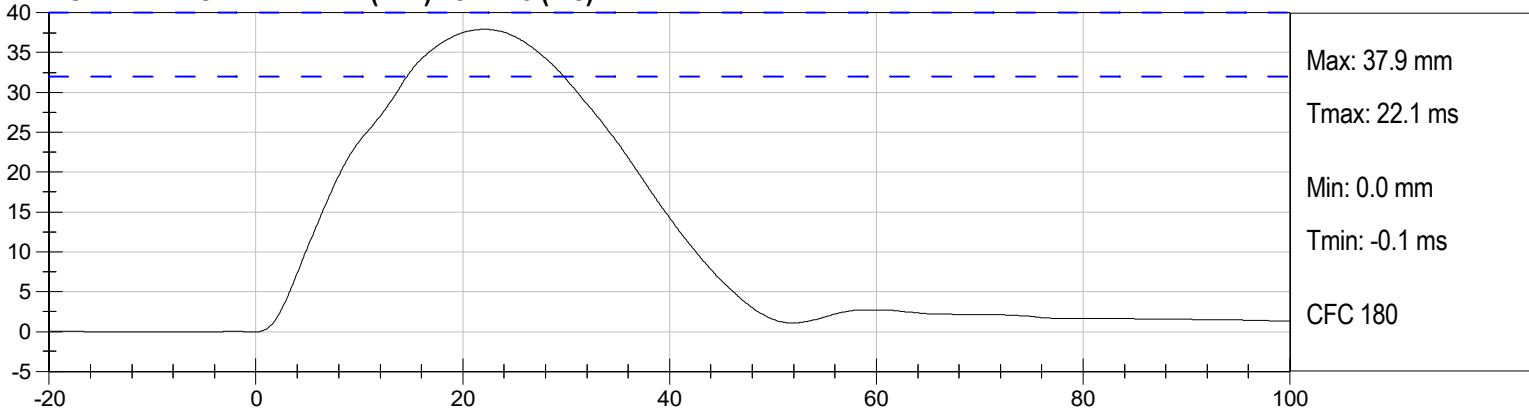


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	4.2 to 4.4	4.23	Pass
Peak Probe Acceleration	g	14 to 18	15	Pass
Upper Spine (T1) Y Acceleration	g	13 to 17	14	Pass
Lower Spine (T12) 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	41	Pass

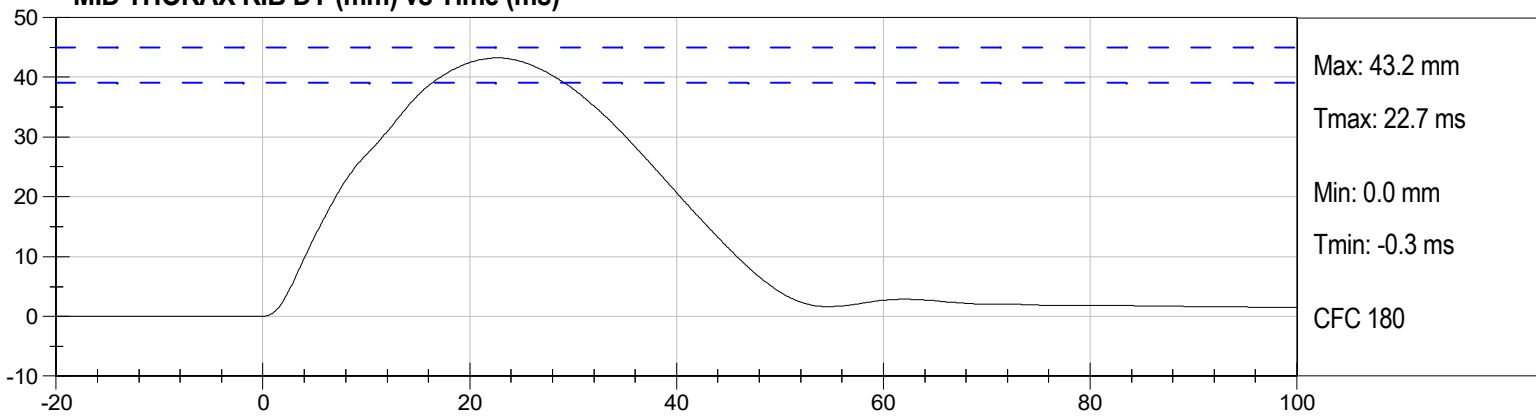
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P82319	05/27/2025	11/26/2025
LOWER SPINE Y	Endevco	P96335	05/27/2025	11/26/2025
UPPER THORAX RIB DY	FTSS	G033	05/28/2025	11/27/2025
MID THORAX RIB DY	Servo	G2403	05/28/2025	11/27/2025
LOWER THORAX RIB DY	FTSS	G1270	05/28/2025	11/27/2025



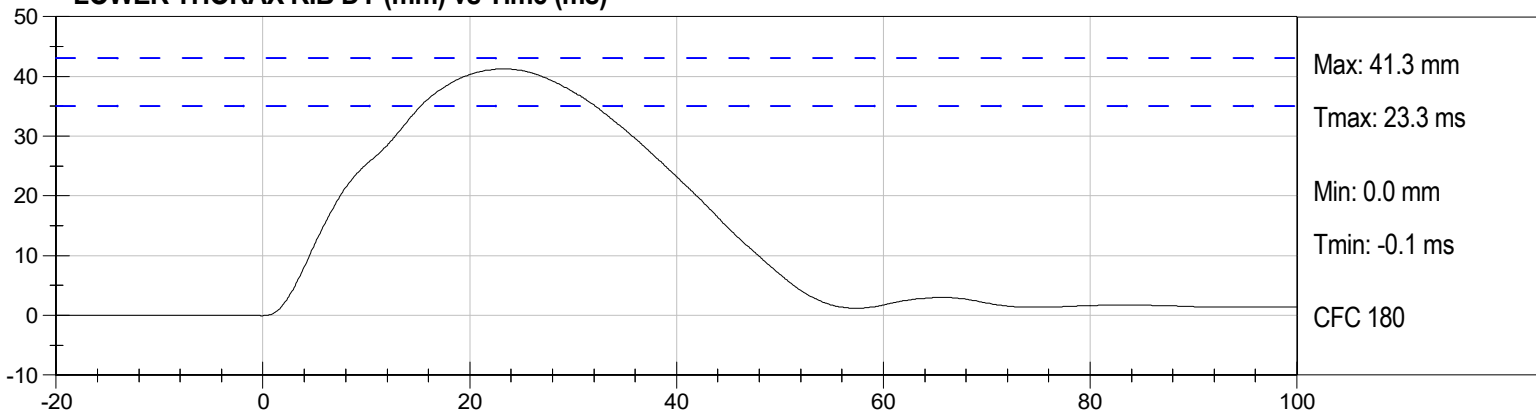
UPPER THORAX RIB DY (mm) vs Time (ms)



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



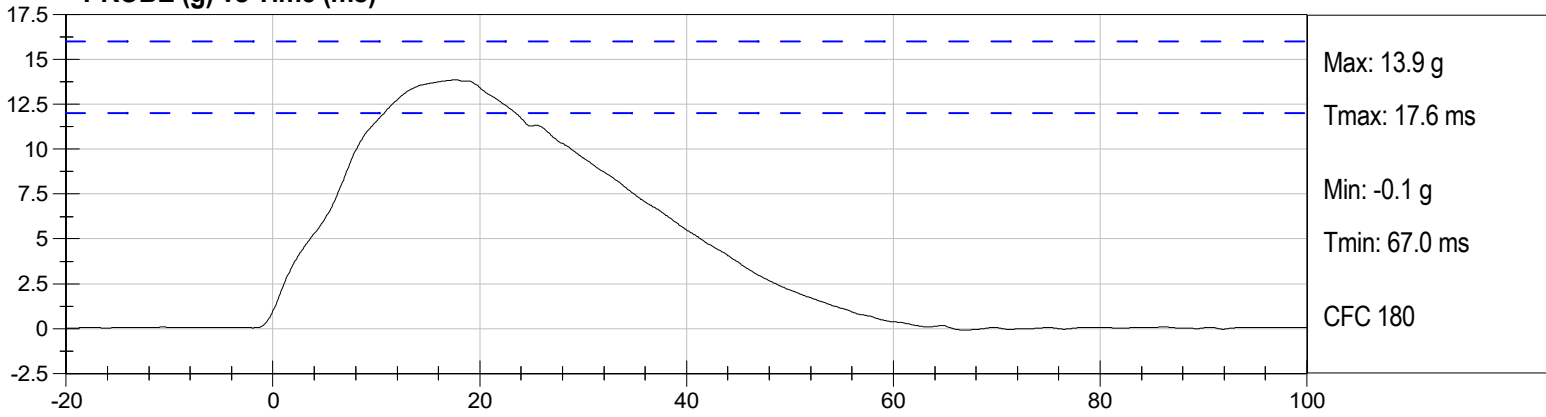
LOWER THORAX RIB DY (mm) vs Time (ms)



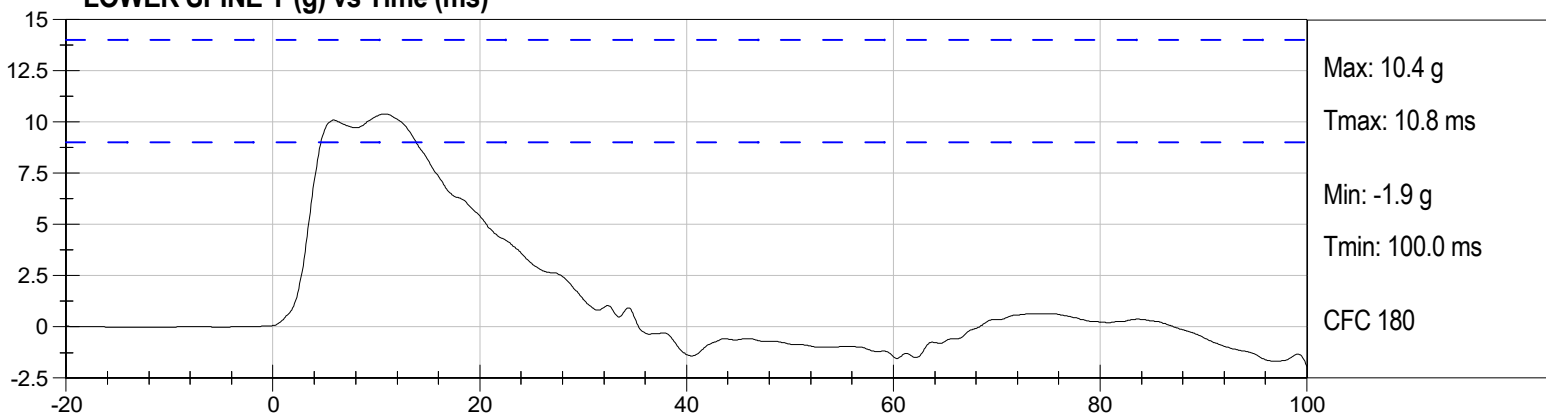
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.2 to 4.4	4.27	Pass
Peak Probe Acceleration	g	12 to 16	14	Pass
Lower Spine (T12) Y Acceleration	g	9 to 14	10	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	43	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	37	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
LOWER SPINE Y	Endevco	P96335	05/27/2025	11/26/2025
UPPER ABDOMINAL RIB DY	FTSS	G032	05/28/2025	11/27/2025
LOWER ABDOMINAL RIB DY	Medius	MJ5171	05/28/2025	11/27/2025

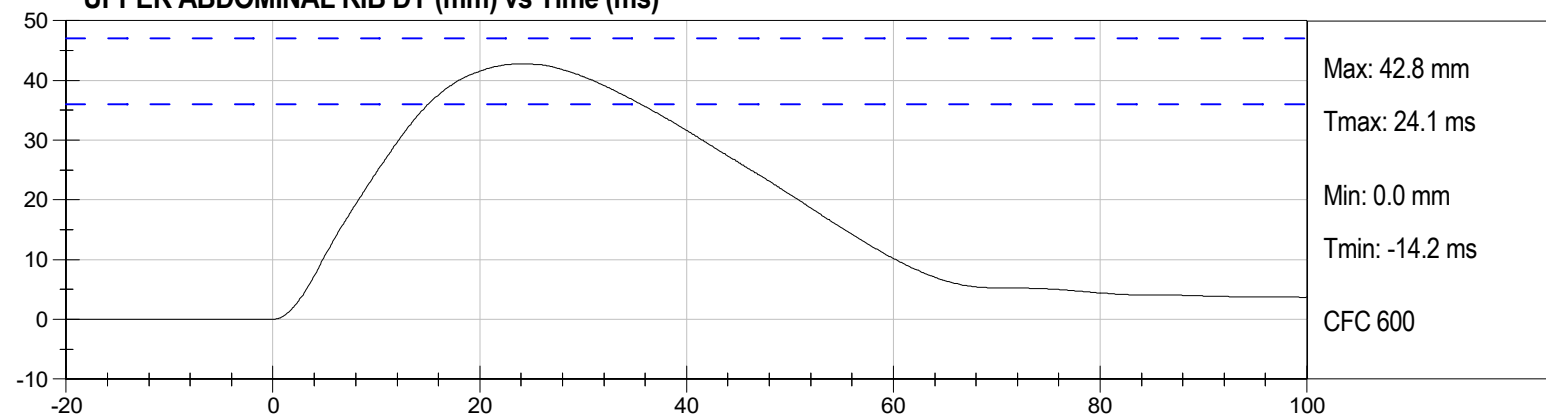
PROBE (g) vs Time (ms)



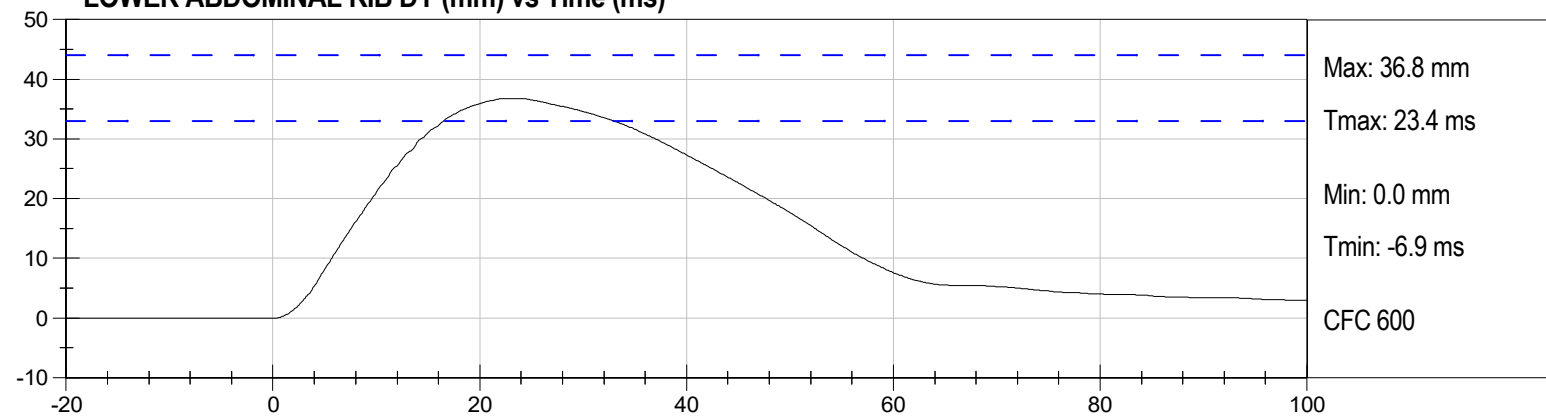
LOWER SPINE Y (g) vs Time (ms)



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



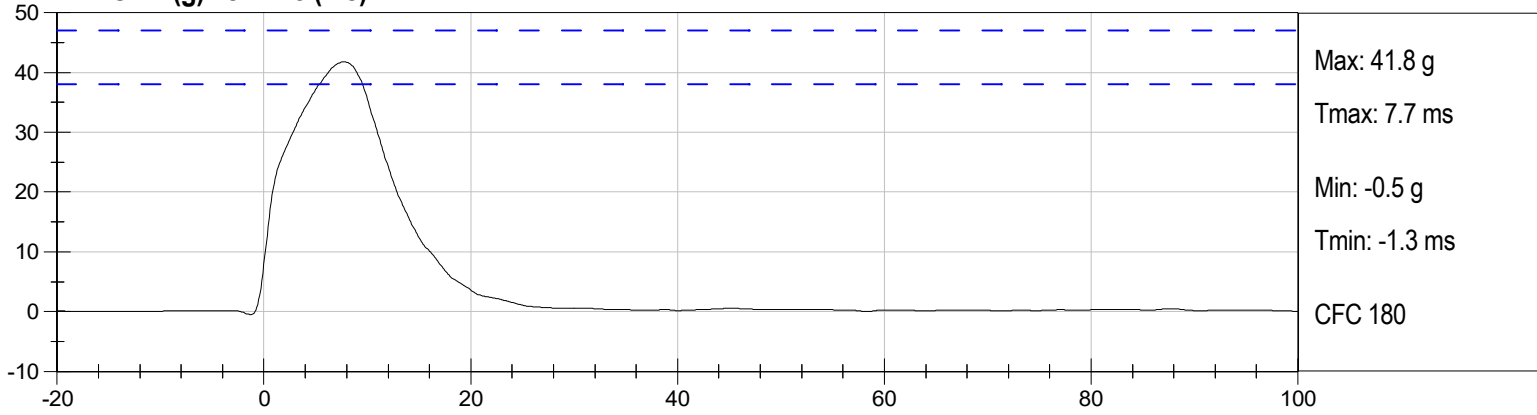
LOWER ABDOMINAL RIB DY (mm) vs Time (ms)



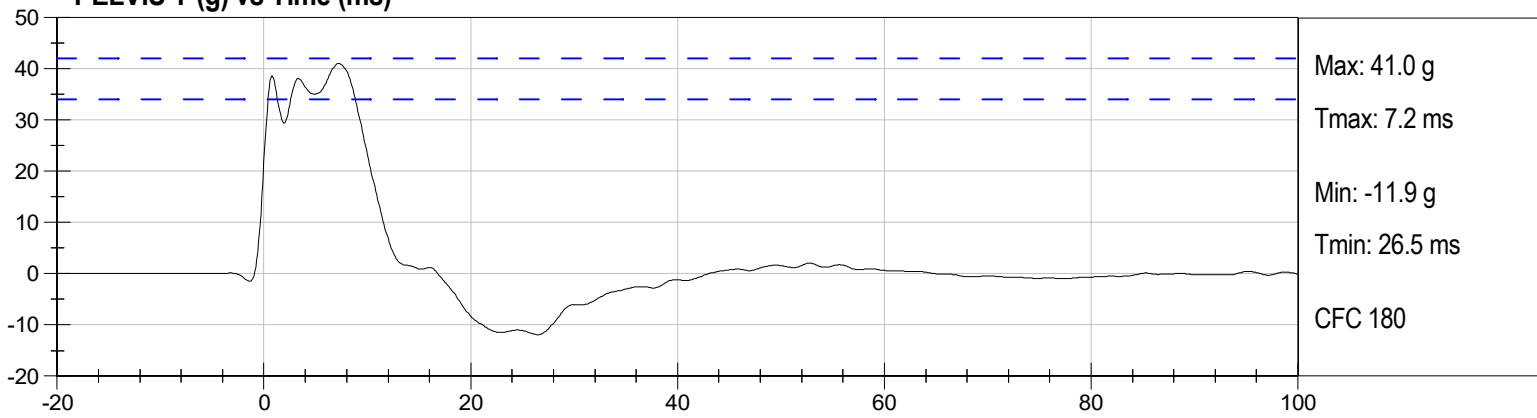
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	6.6 to 6.8	6.80	Pass
Peak Probe Acceleration	g	38 to 47	42	Pass
Peak Pelvis Y Acceleration after 6 ms	g	34 to 42	41.0	Pass
Acetabulum Force	N	3600 to 4300	3866	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
PELVIS Y	Endevco	P82673	05/27/2025	11/26/2025
ACETABULUM FY	FTSS	ACG4285FY	05/28/2025	5/28/2026

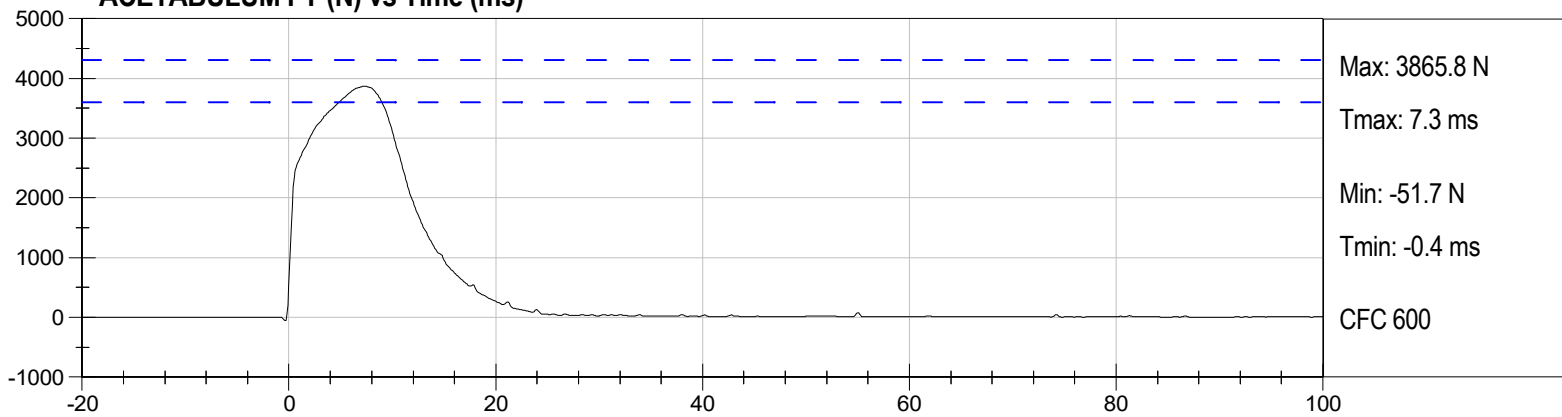
PROBE (g) vs Time (ms)



PELVIS Y (g) vs Time (ms)



ACETABULUM FY (N) vs Time (ms)



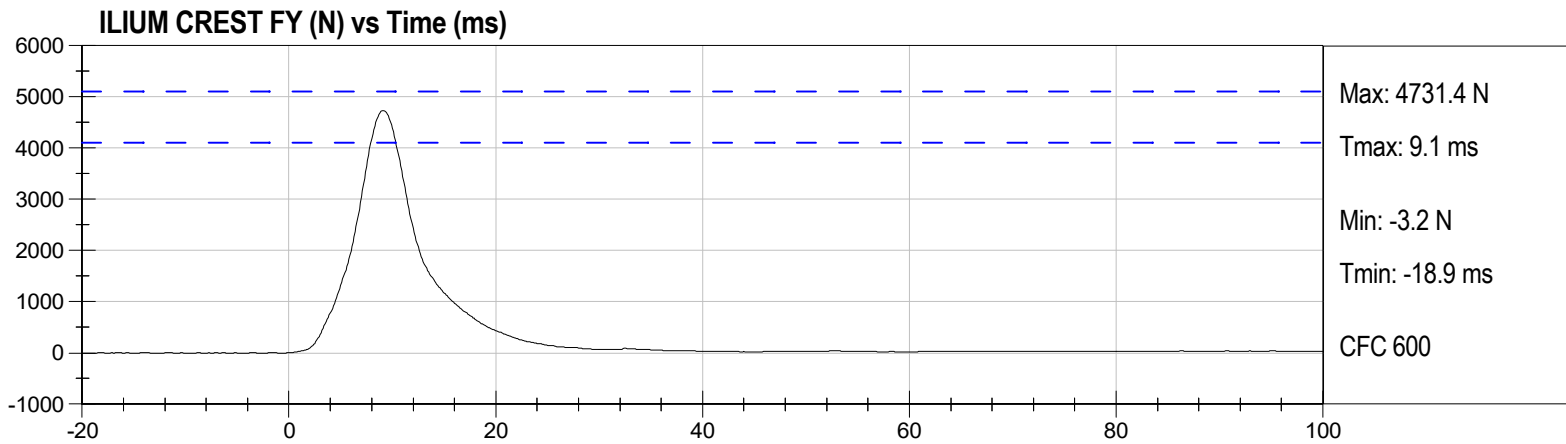
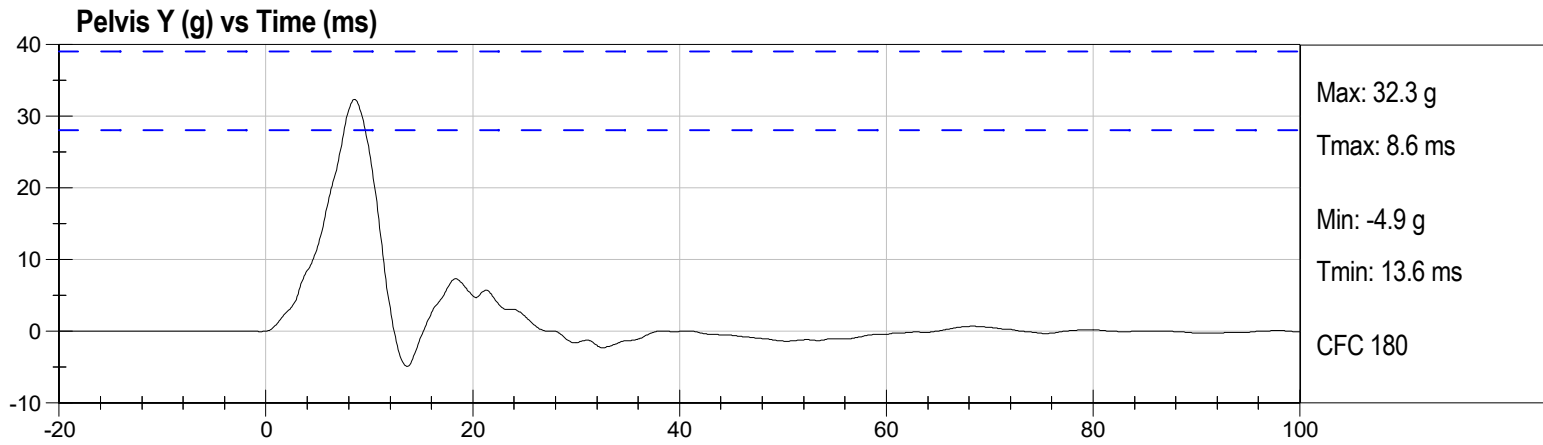
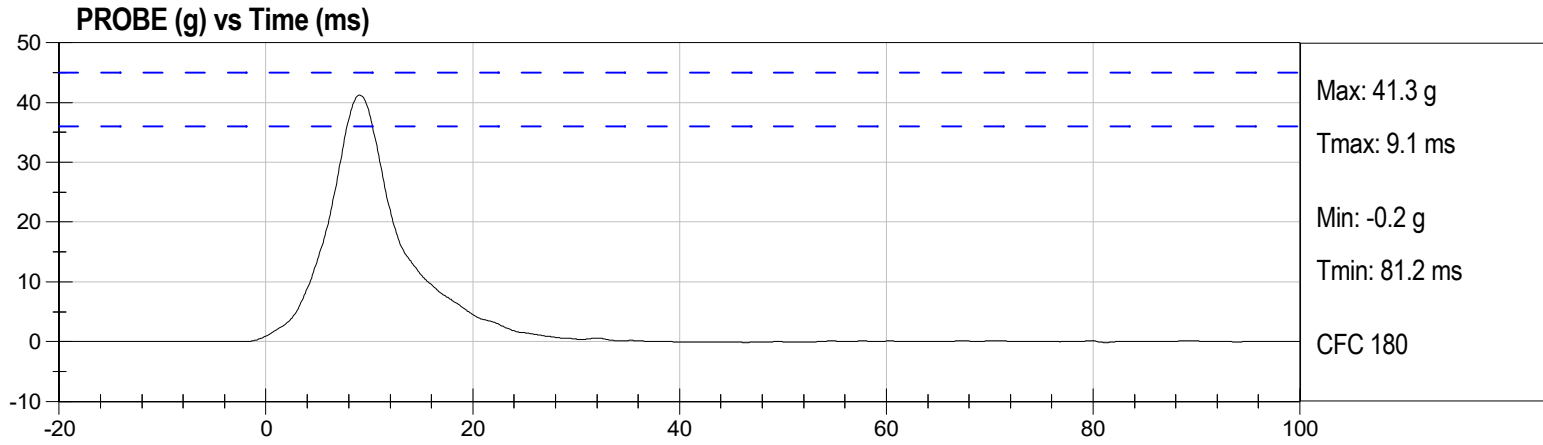


Iliac Impact Test
SID IIs
ATD Serial No: 306

Test Date: 07/16/2025
Test ID: D252058
Test Technician: Brian Lucas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.2 to 4.4	4.23	Pass
Peak Probe Acceleration	g	36 to 45	41	Pass
Peak Pelvis Y Acceleration	g	28 to 39	32	Pass
Iliac Force	N	4100 to 5100	4731	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
Pelvis Y	Endevco	P82673	05/27/2025	11/26/2025
ILIUM CREST FY	FTSS	IWG3023FY	05/28/2025	5/28/2026



QUALIFICATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

SID-IIsD External Measurements
SN: 306

No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	785	Pass
B	Shoulder Pivot Height	437 - 453	449	Pass
C	H-point Height	79 - 89	86	Pass
D	H-point from Seatback	141 - 151	147	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	120	Pass
G	Head Breadth	140 - 148	141	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	182	Pass
J	Head Circumference	541 - 551	550	Pass
K	Buttock to Knee Length	514 - 540	538	Pass
L	Popliteal Height	343 - 369	349	Pass
M	Knee Pivot to Floor Height	392 - 409	394	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	198	Pass
P	Foot Length	216 - 232	222	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	317	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	483	Pass
V	Shoulder Width	341 - 357	351	Pass
W	Foot Width	78 - 94	82	Pass
Y	Chest Circumference w/ jacket	851 - 881	863	Pass
Z	Waist Circumference	761 - 791	782	Pass

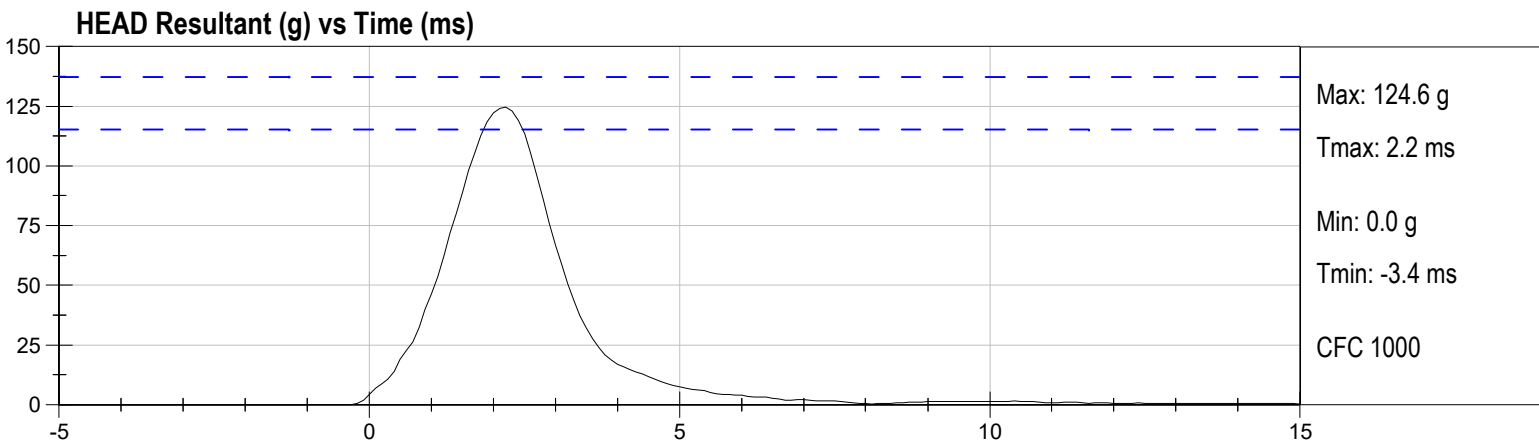
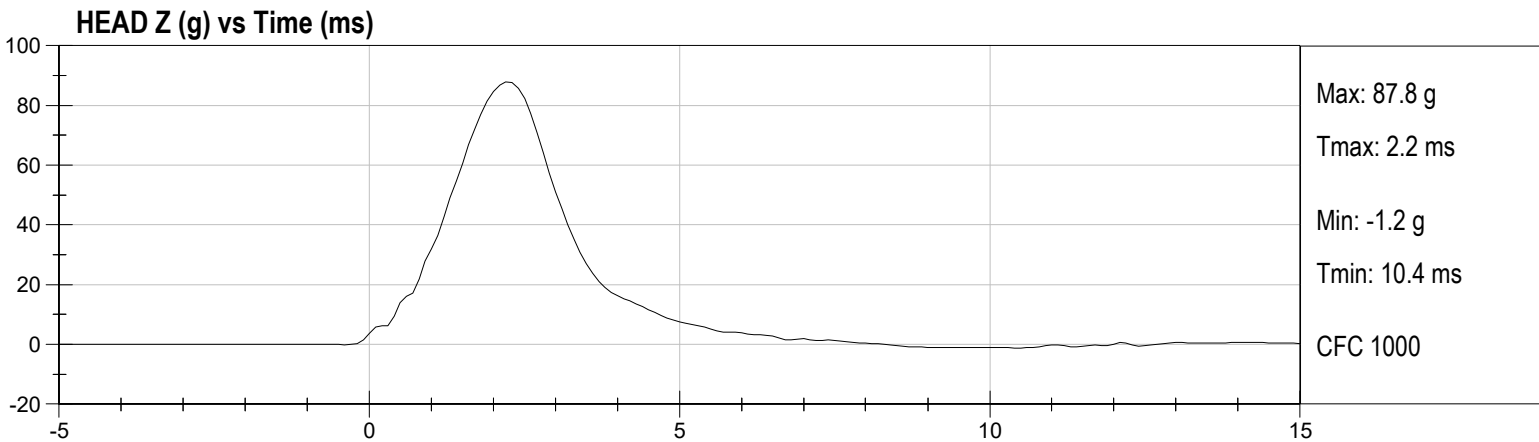
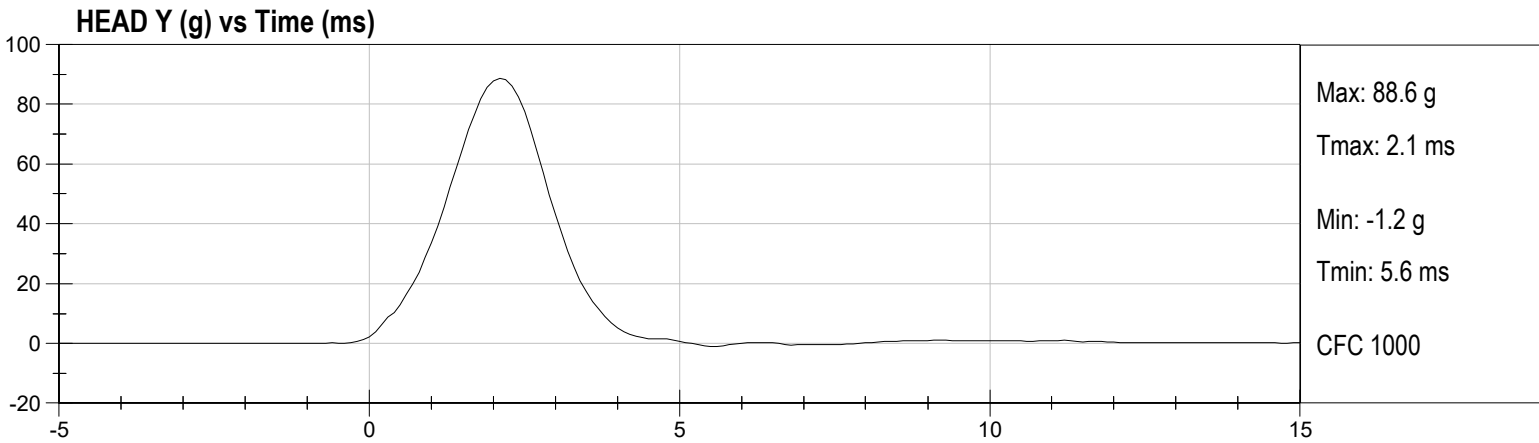
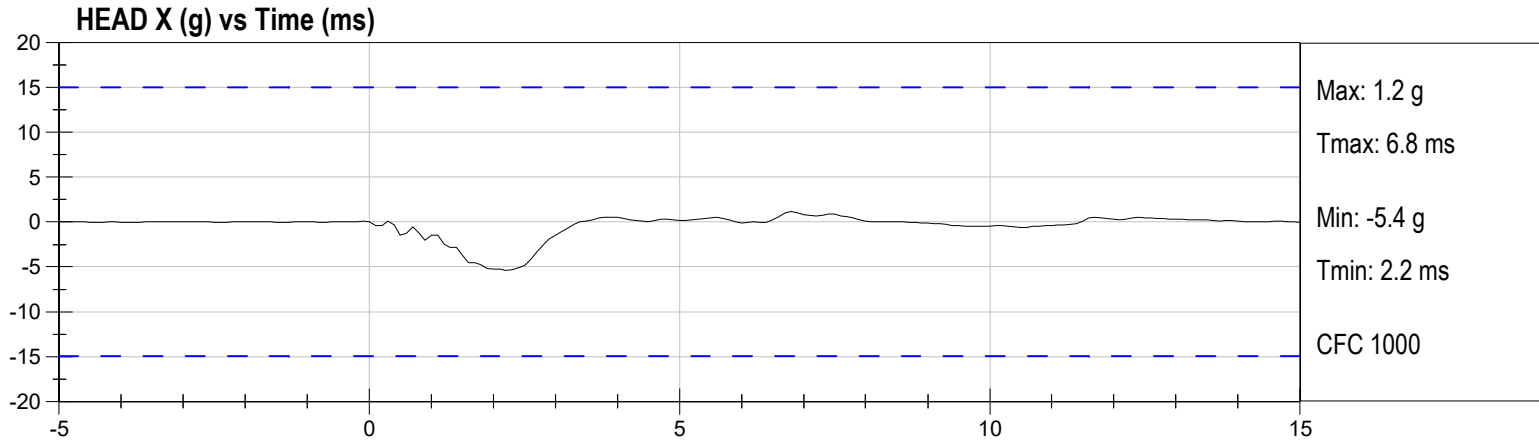


Lateral Head Drop Test
SID IIs
ATD Serial No: 306

Test Date: 08/07/2025
Test ID: D252311
Test Technician: Jonah Pulokas

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Peak Resultant Acceleration	g	115 to 137	125	Pass
Peak Longitudinal Acceleration	g	-15.0 to 15.0	-5.4	Pass
Unimodal	%	within 15% of peak	2	Pass

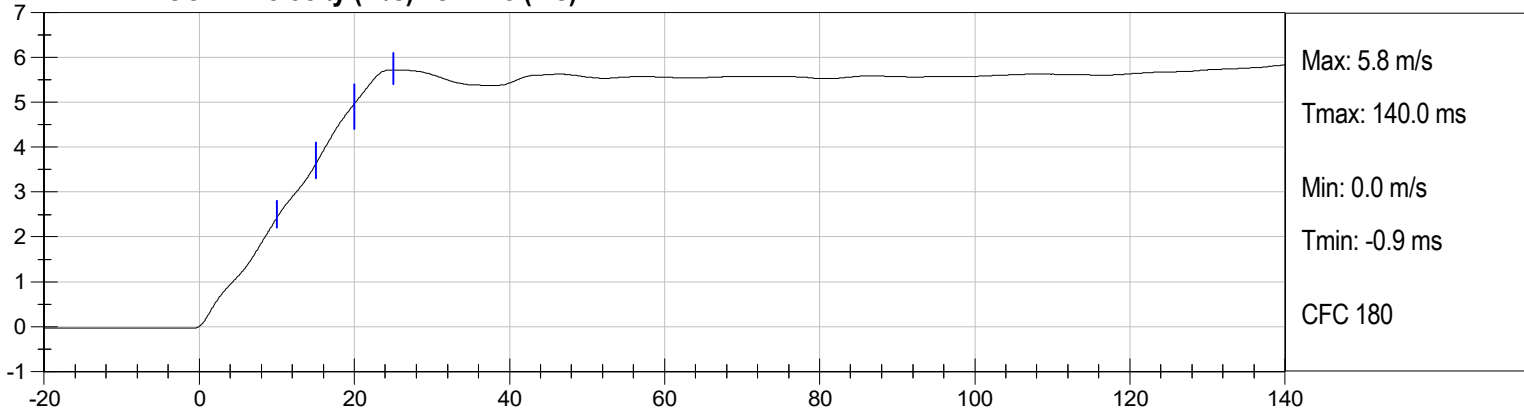
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
HEAD Y	Endevco	T30974	05/27/2025	11/26/2025
HEAD X	Endevco	T30975	05/27/2025	11/26/2025
HEAD Z	Endevco	T30976	05/27/2025	11/26/2025



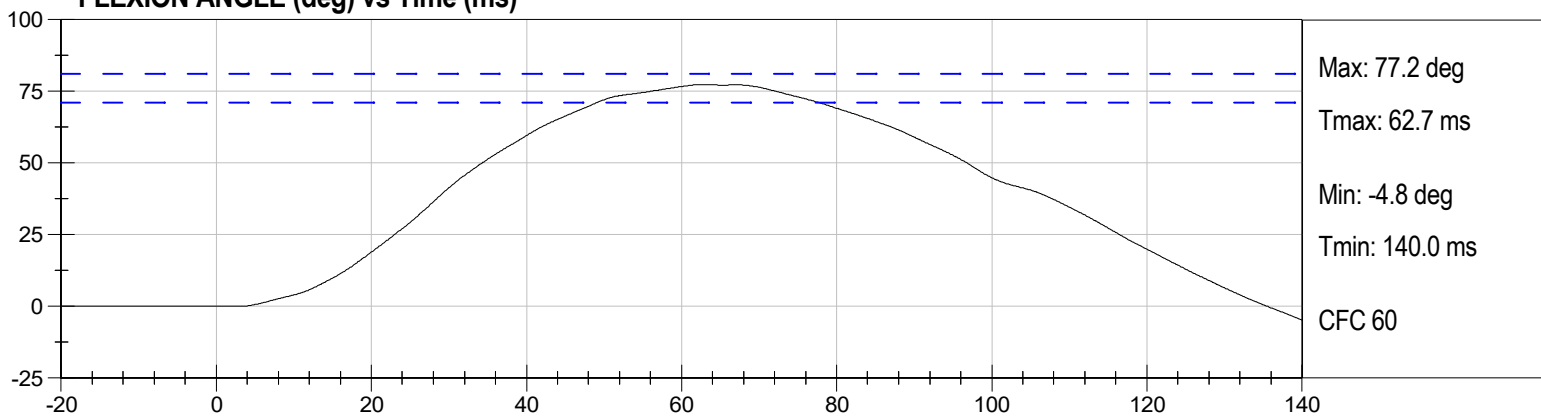
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	5.51 to 5.63	5.52	Pass
Pendulum Velocity at 10 ms	m/s	2.20 to 2.80	2.40	Pass
Pendulum Velocity at 15 ms	m/s	3.30 to 4.10	3.59	Pass
Pendulum Velocity at 20 ms	m/s	4.40 to 5.40	4.95	Pass
Pendulum Velocity at 25 ms	m/s	5.40 to 6.10	5.72	Pass
Peak Pendulum Velocity from 25 to 100 ms	m/s	5.50 to 6.20	5.72	Pass
Maximum "D" Plane Rotation	deg	71 to 81	77	Pass
Time of Maximum "D" Plane Rotation	ms	50 to 70	63	Pass
Maximum Moment About Occipital Condyle	Nm	-44 to -36	-41	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	C19538	05/19/2025	11/18/2025
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	07/16/2025	1/15/2026
POT. C - HEADFORM	Servo	2204	07/16/2025	1/15/2026

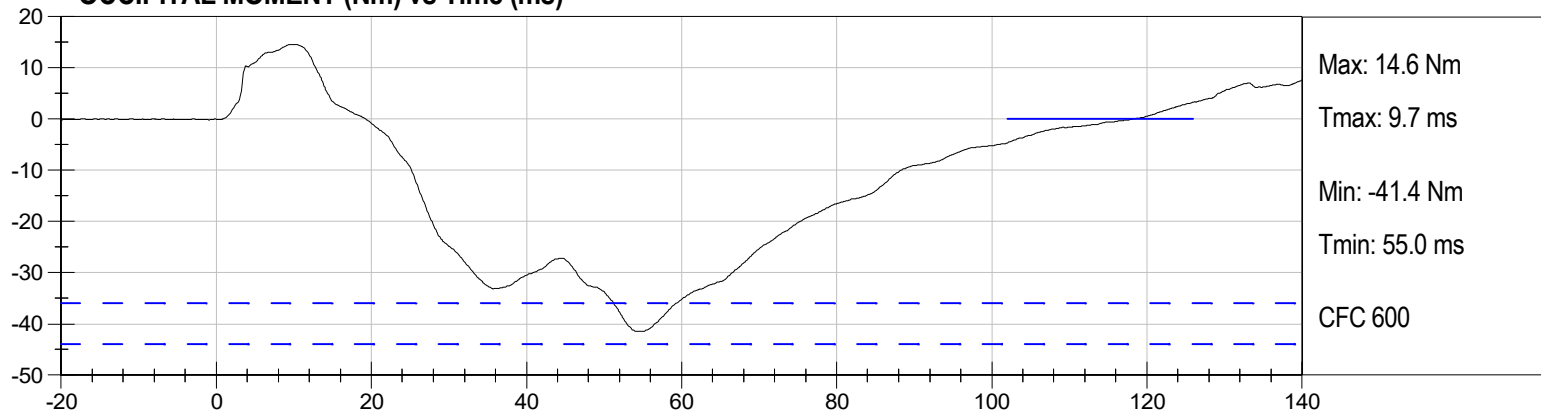
PEND. ACCEL. Velocity (m/s) vs Time (ms)



FLEXION ANGLE (deg) vs Time (ms)

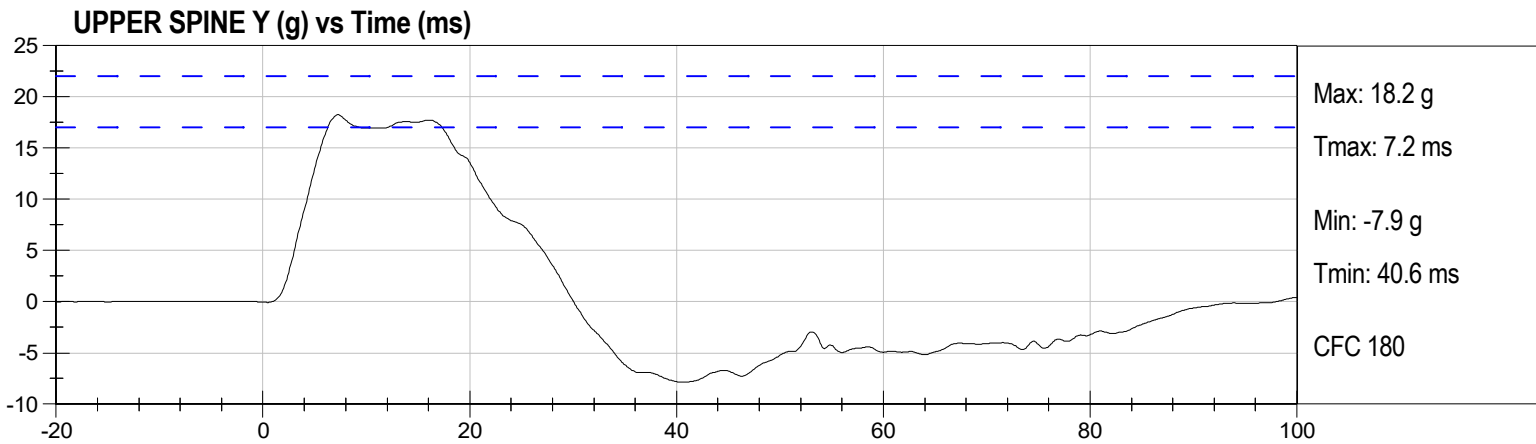
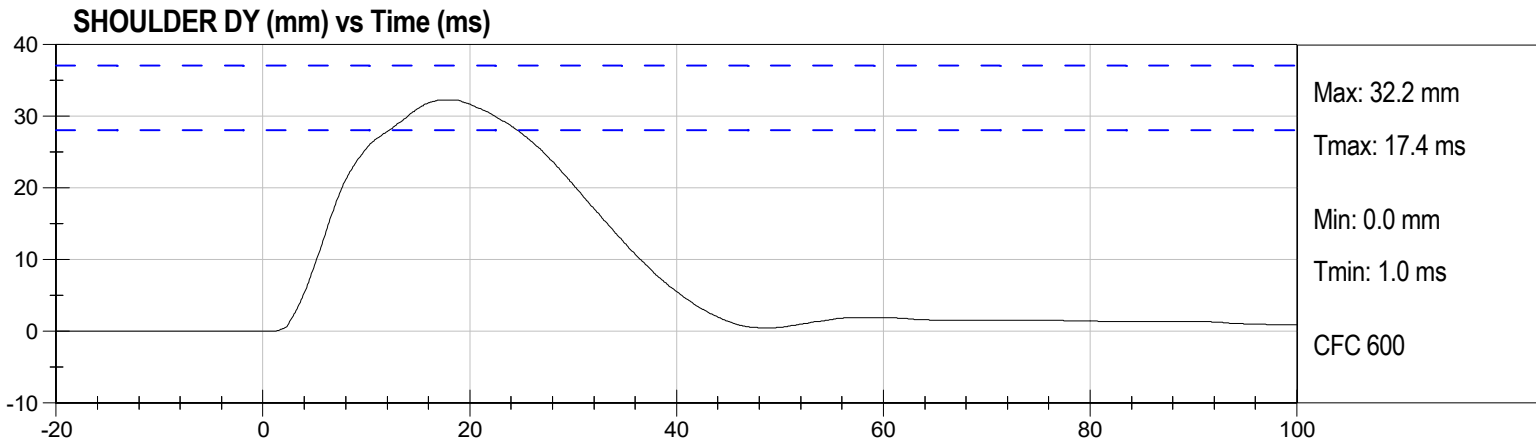
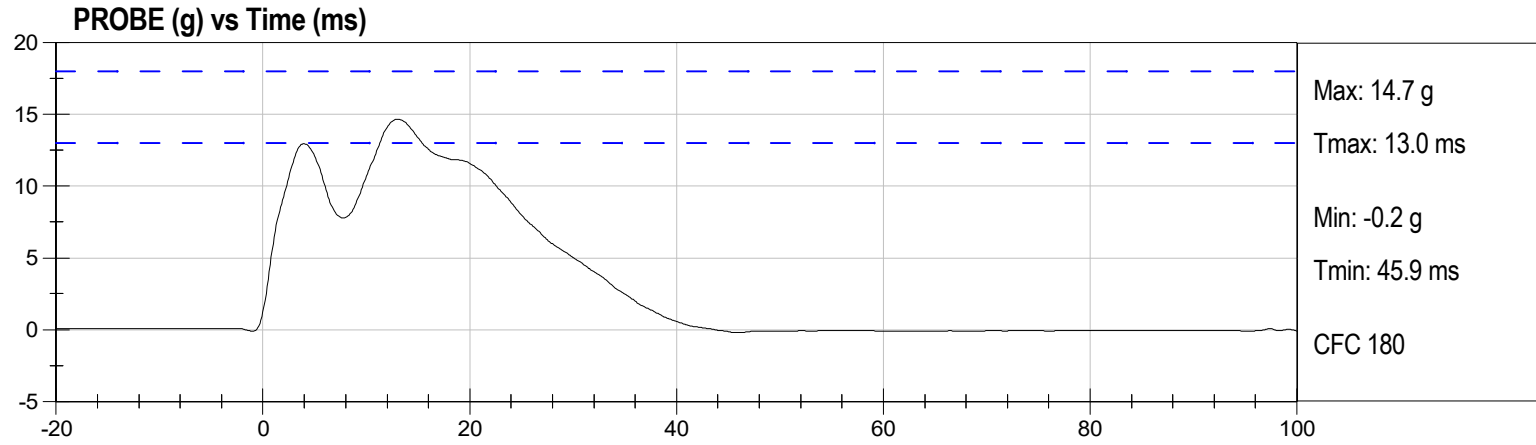


OCCIPITAL MOMENT (Nm) vs Time (ms)



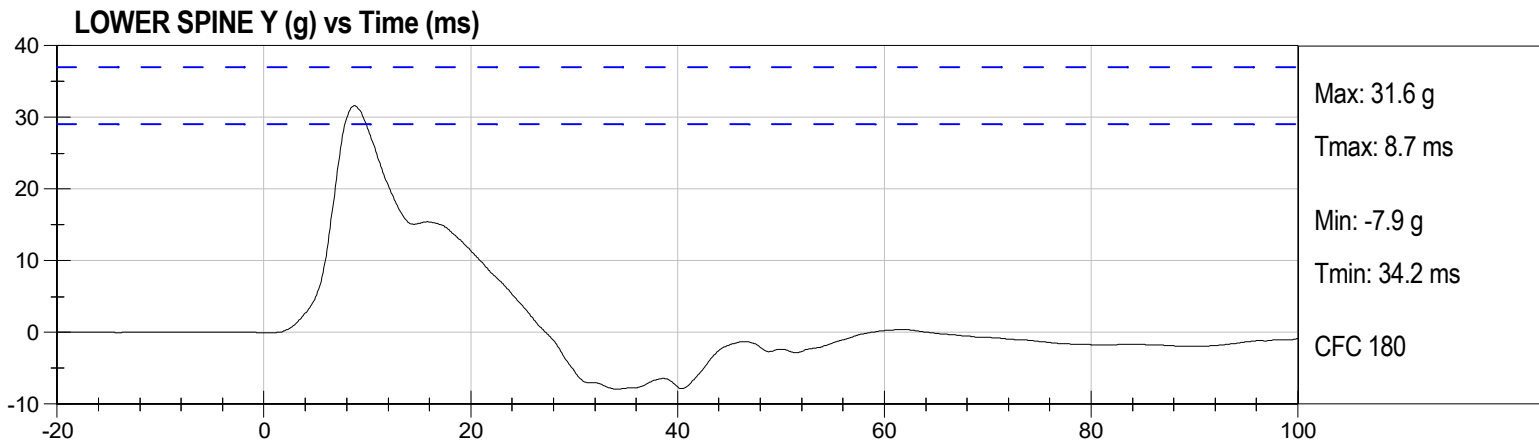
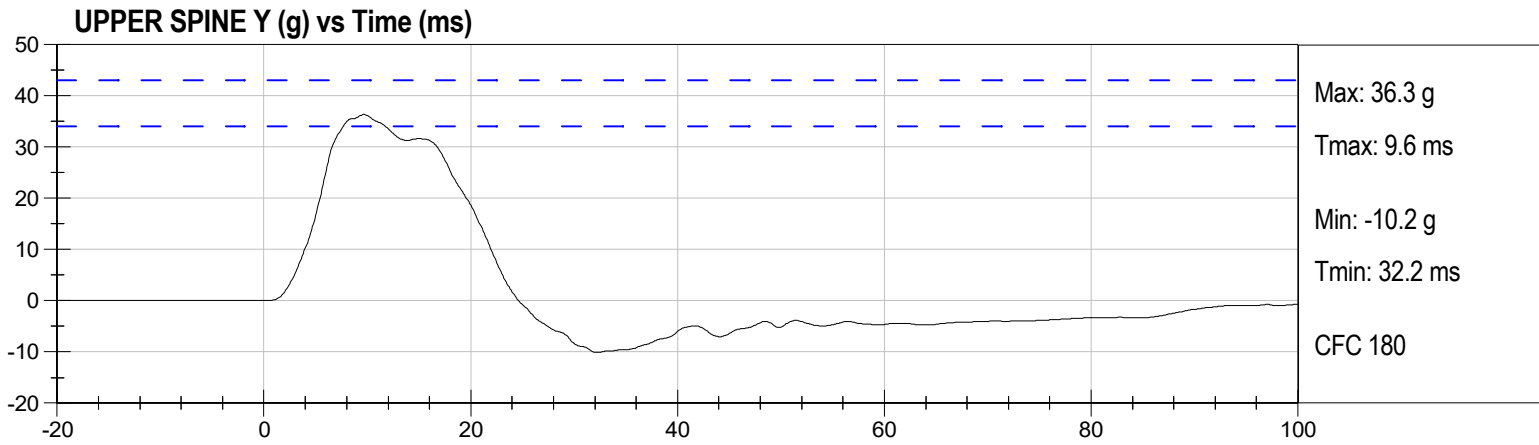
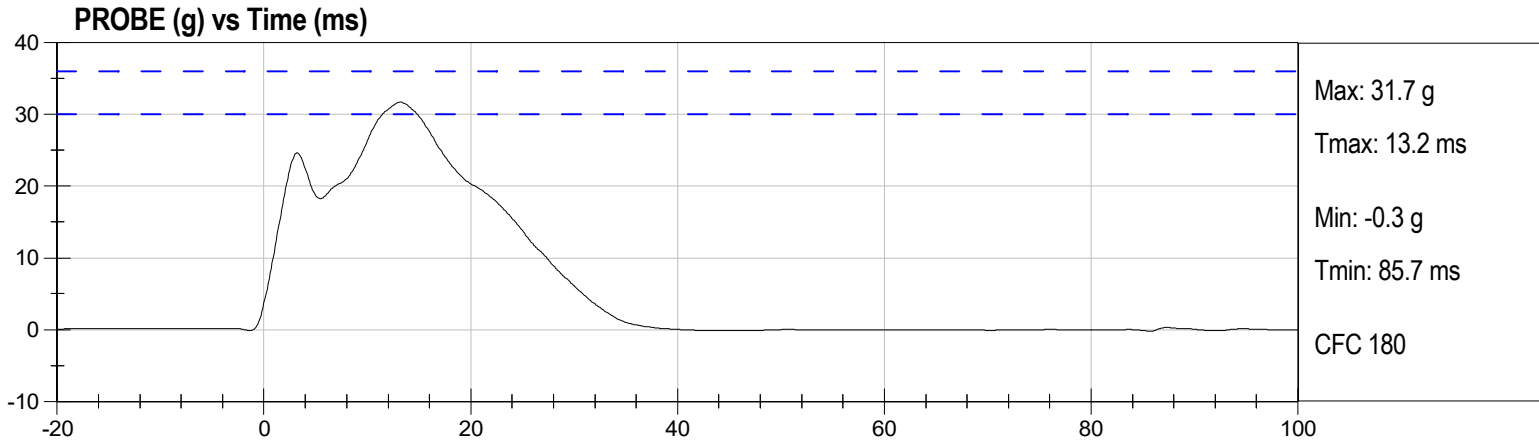
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.2 to 4.4	4.38	Pass
Peak Probe Acceleration	g	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	32	Pass
Upper Spine (T1) Y Acceleration	g	17 to 22	18	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P82319	05/27/2025	11/26/2025
SHOULDER DY	FTSS	G050	05/28/2025	11/27/2025

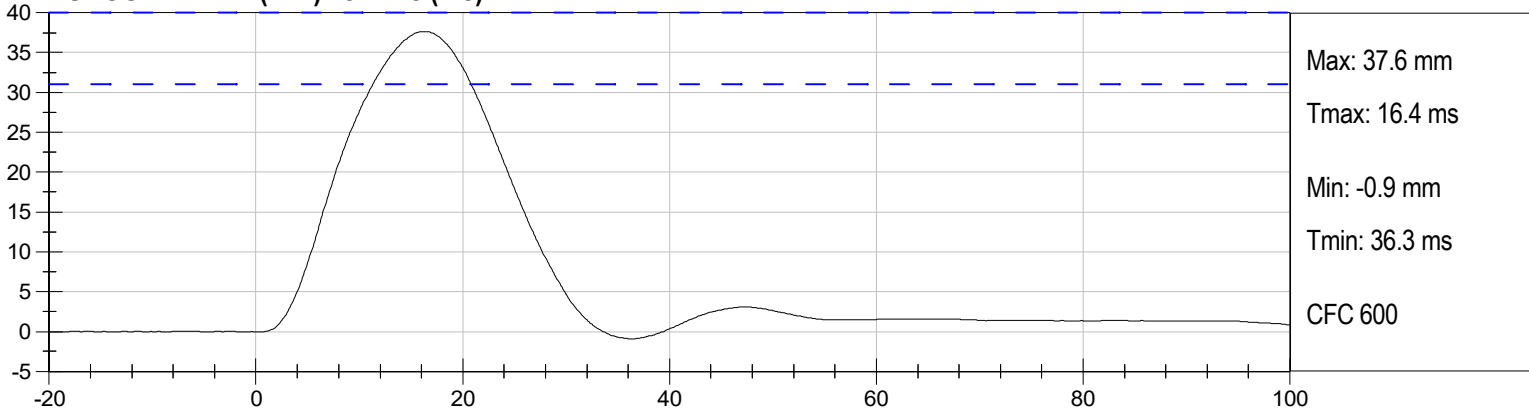


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration after 5 ms	g	30 to 36	32	Pass
Upper Spine (T1) Y Acceleration	g	34 to 43	36	Pass
Lower Spine (T12) Y Acceleration	g	29 to 37	32	Pass
Shoulder Displacement	mm	31 to 40	38	Pass
Upper Thorax Rib Displacement	mm	25 to 32	29	Pass
Middle Thorax Rib Displacement	mm	30 to 36	33	Pass
Lower Thorax Rib Displacement	mm	32 to 38	36	Pass

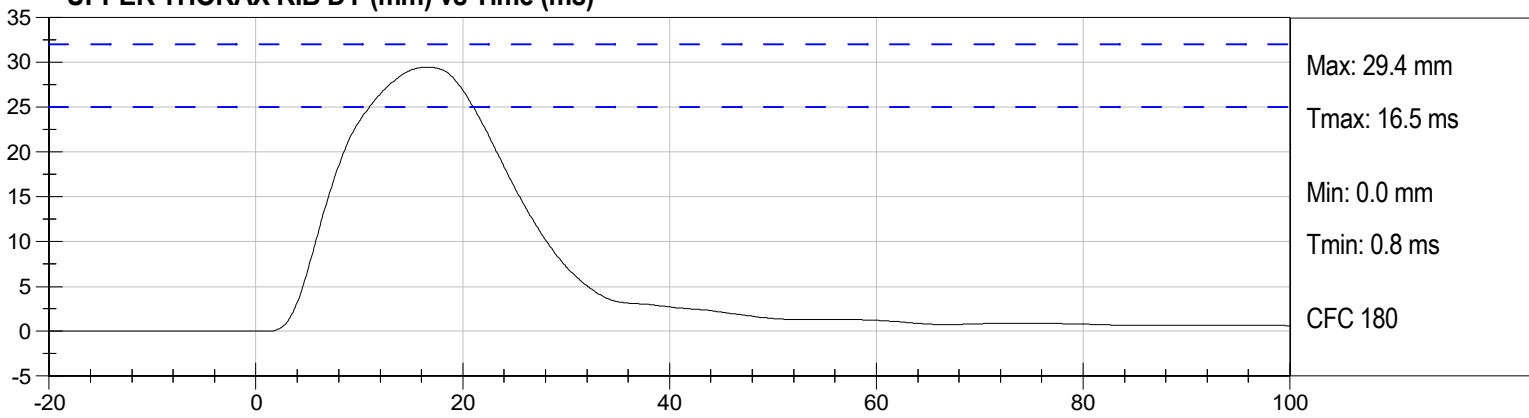
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P82319	05/27/2025	11/26/2025
LOWER SPINE Y	Endevco	P96335	05/27/2025	11/26/2025
SHOULDER DY	FTSS	G050	05/28/2025	11/27/2025
UPPER THORAX RIB DY	FTSS	G033	05/28/2025	11/27/2025
MID THORAX RIB DY	Servo	G2403	05/28/2025	11/27/2025
LOWER THORAX RIB DY	FTSS	G1270	05/28/2025	11/27/2025



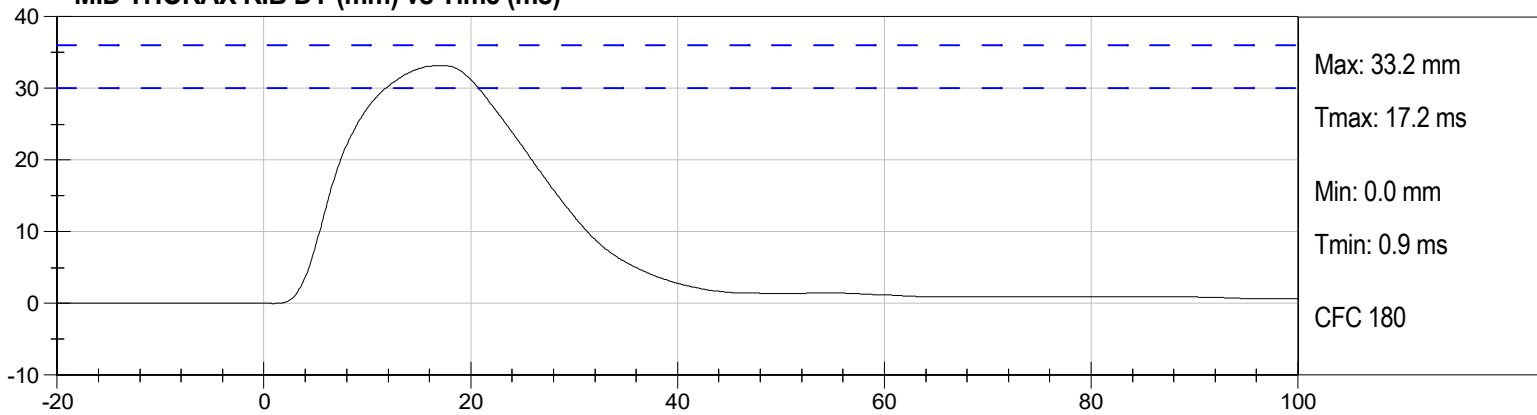
SHOULDER DY (mm) vs Time (ms)



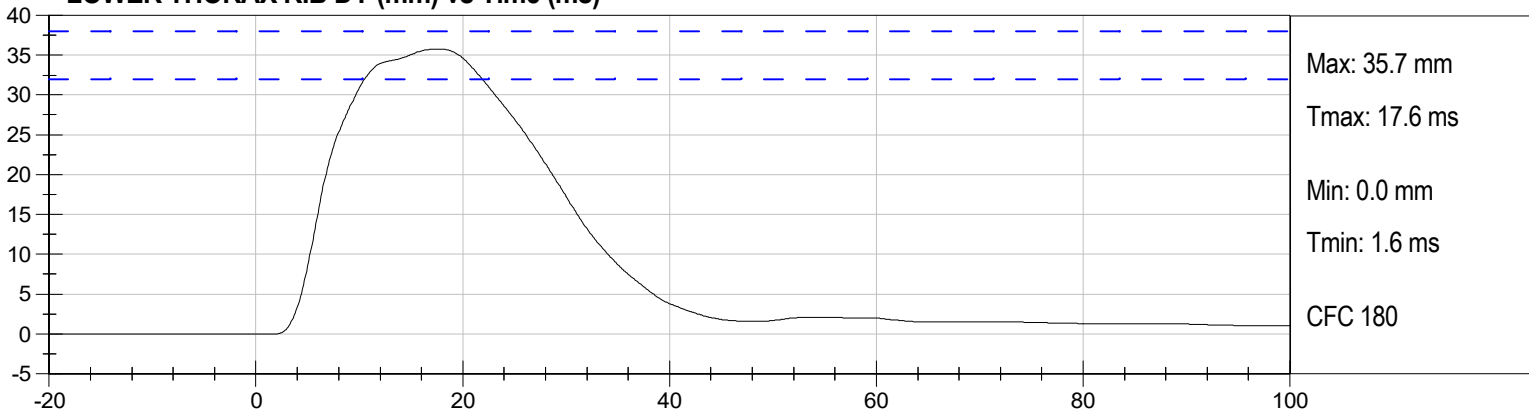
UPPER THORAX RIB DY (mm) vs Time (ms)



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



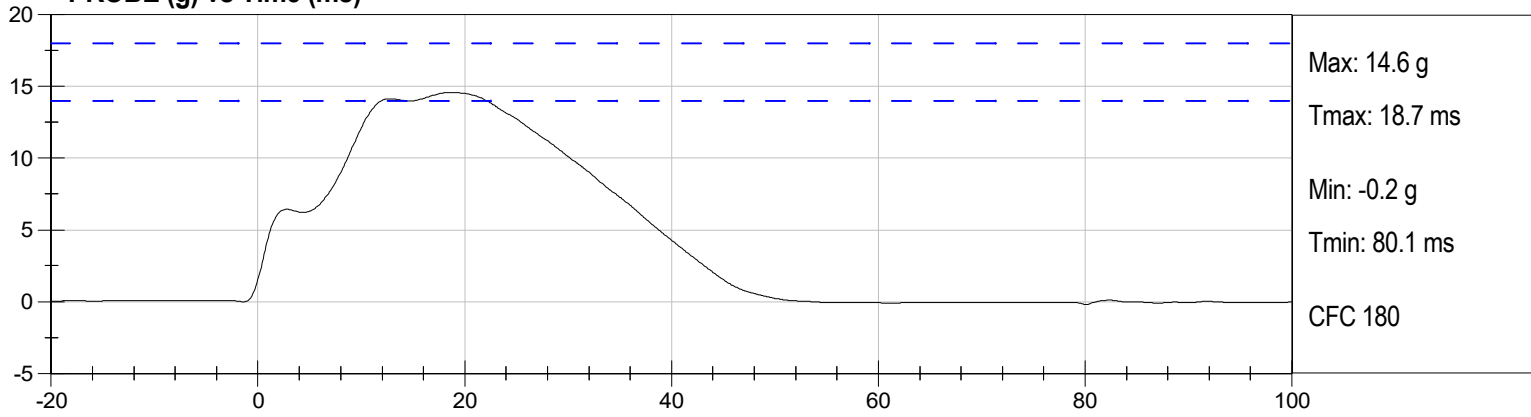
LOWER THORAX RIB DY (mm) vs Time (ms)



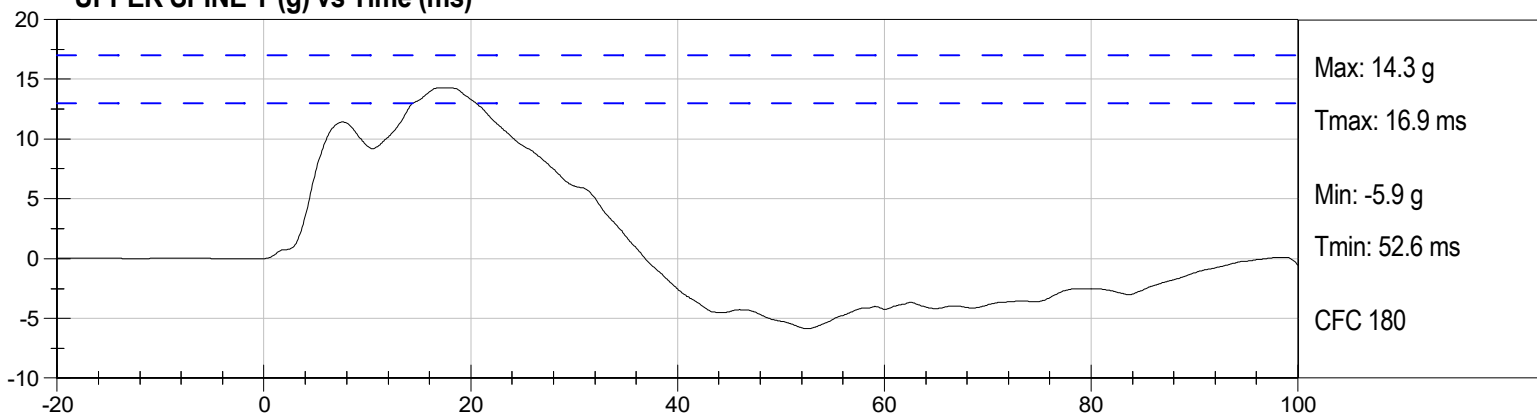
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.2 to 4.4	4.23	Pass
Peak Probe Acceleration	g	14 to 18	15	Pass
Upper Spine (T1) Y Acceleration	g	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	g	7 to 11	9	Pass
Upper Thorax Rib Displacement	mm	32 to 40	37	Pass
Middle Thorax Rib Displacement	mm	39 to 45	41	Pass
Lower Thorax Rib Displacement	mm	35 to 43	39	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
UPPER SPINE Y	Endevco	P82319	05/27/2025	11/26/2025
LOWER SPINE Y	Endevco	P96335	05/27/2025	11/26/2025
UPPER THORAX RIB DY	FTSS	G033	05/28/2025	11/27/2025
MID THORAX RIB DY	Servo	G2403	05/28/2025	11/27/2025
LOWER THORAX RIB DY	FTSS	G1270	05/28/2025	11/27/2025

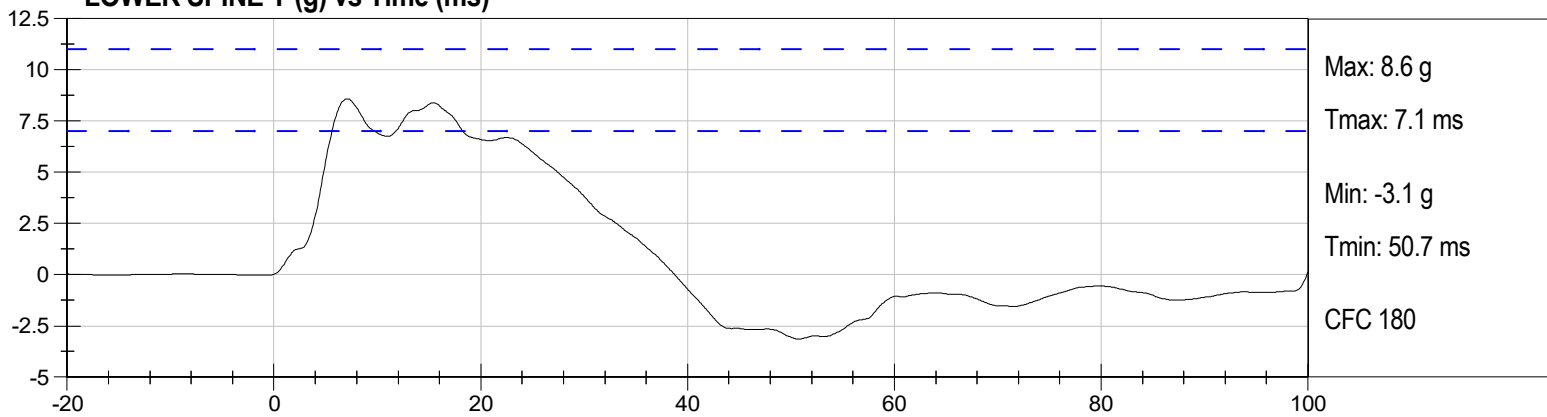
PROBE (g) vs Time (ms)



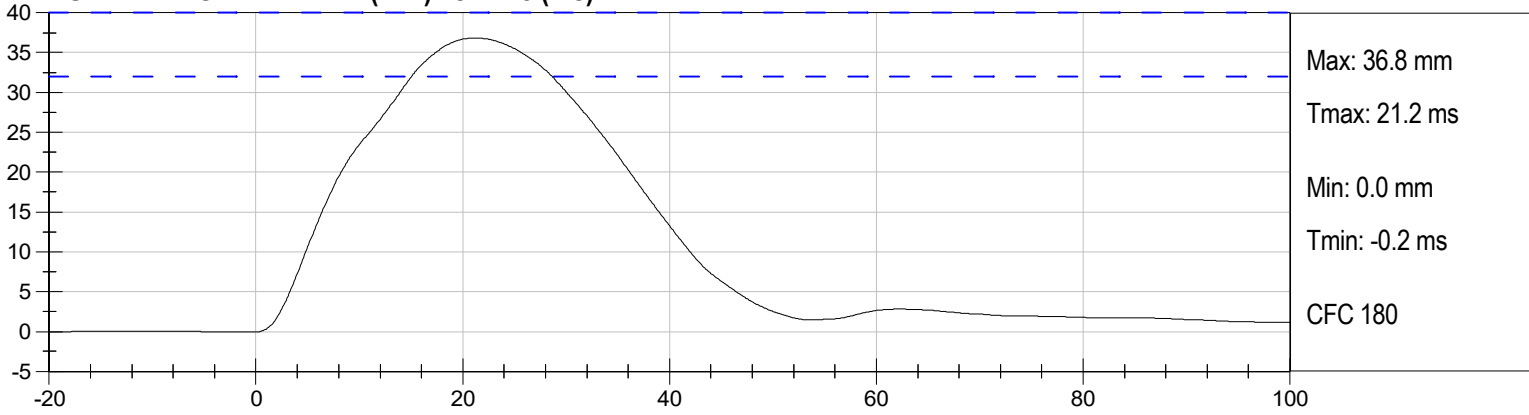
UPPER SPINE Y (g) vs Time (ms)



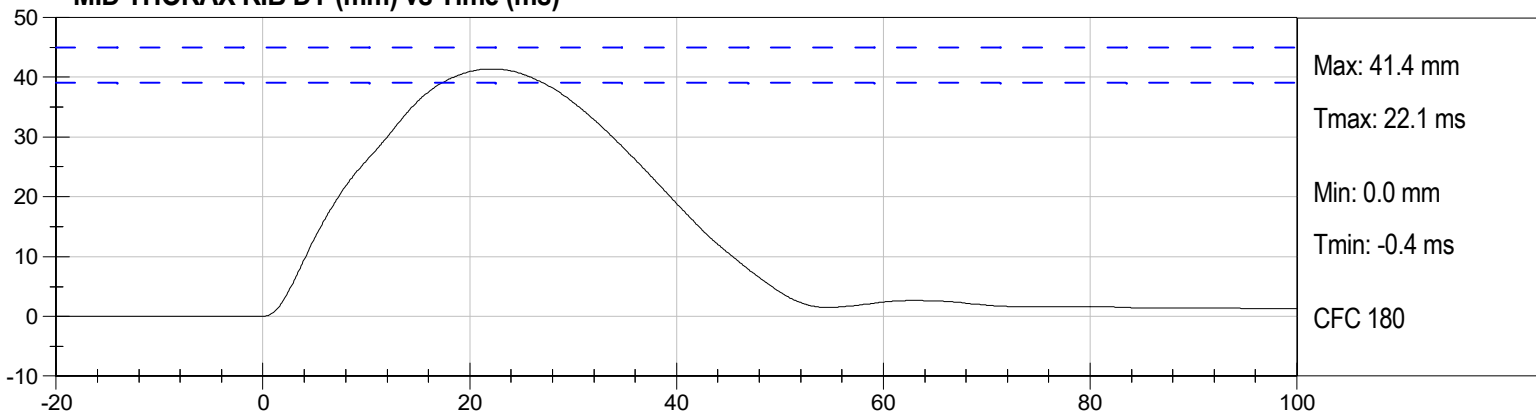
LOWER SPINE Y (g) vs Time (ms)



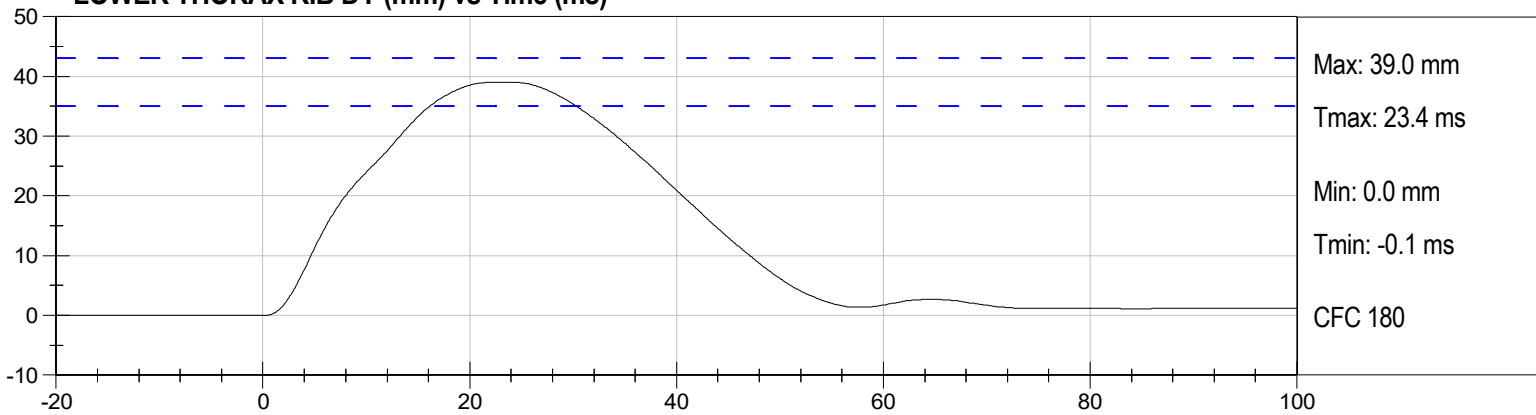
UPPER THORAX RIB DY (mm) vs Time (ms)



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



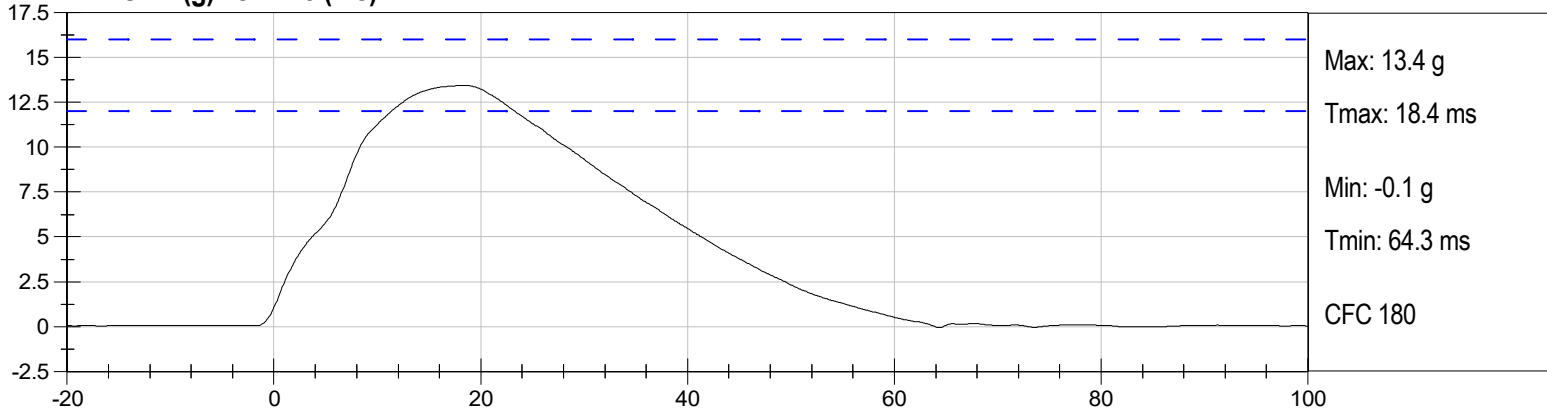
LOWER THORAX RIB DY (mm) vs Time (ms)



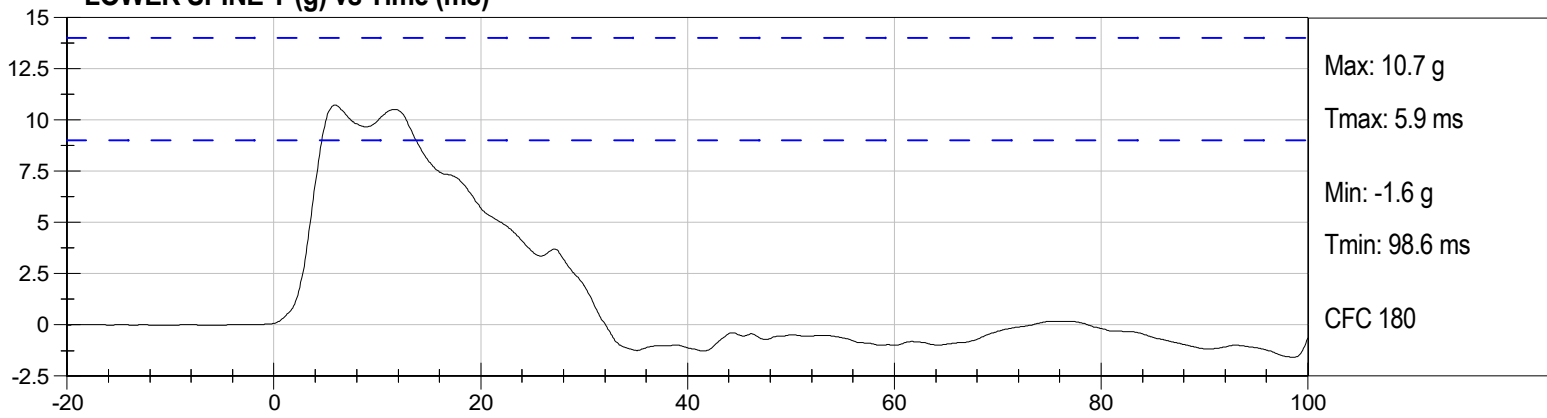
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Impact Velocity	m/s	4.2 to 4.4	4.34	Pass
Peak Probe Acceleration	g	12 to 16	13	Pass
Lower Spine (T12) Y Acceleration	g	9 to 14	11	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	44	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	37	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
LOWER SPINE Y	Endevco	P96335	05/27/2025	11/26/2025
UPPER ABDOMINAL RIB DY	FTSS	G032	05/28/2025	11/27/2025
LOWER ABDOMINAL RIB DY	Medius	MJ5171	05/28/2025	11/27/2025

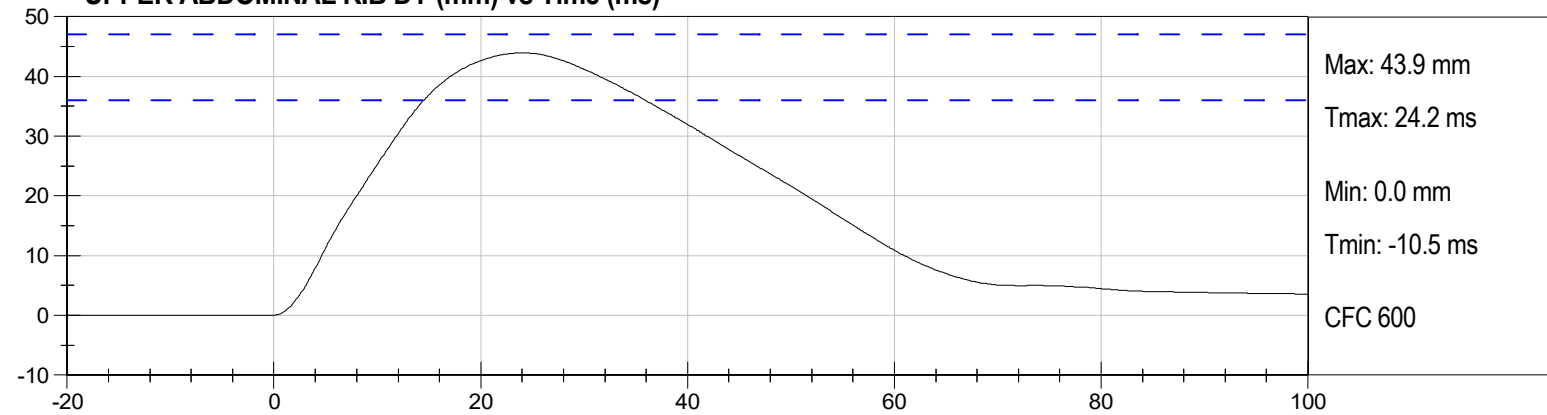
PROBE (g) vs Time (ms)



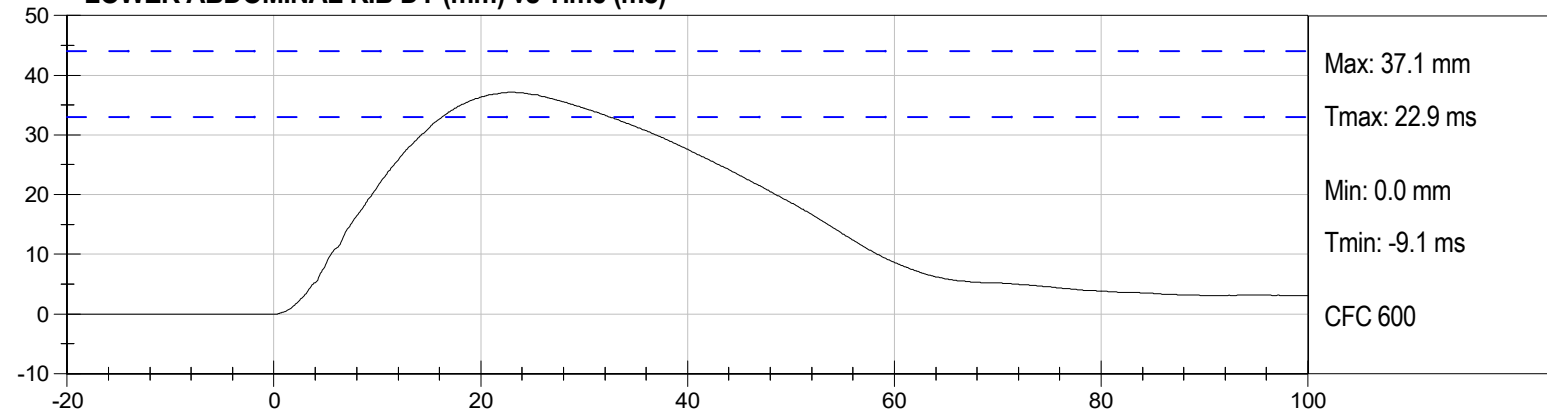
LOWER SPINE Y (g) vs Time (ms)



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



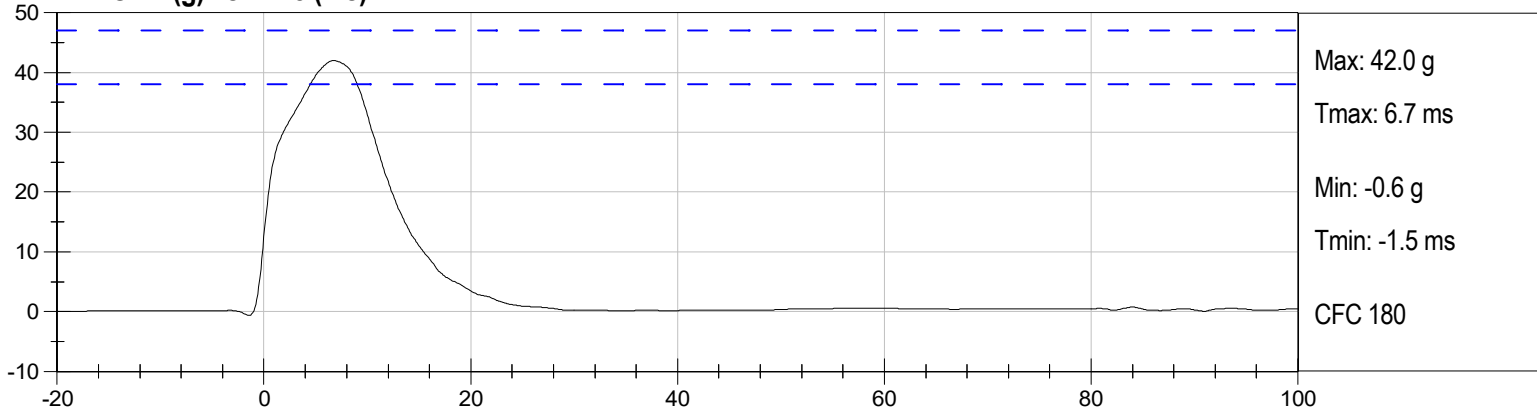
LOWER ABDOMINAL RIB DY (mm) vs Time (ms)



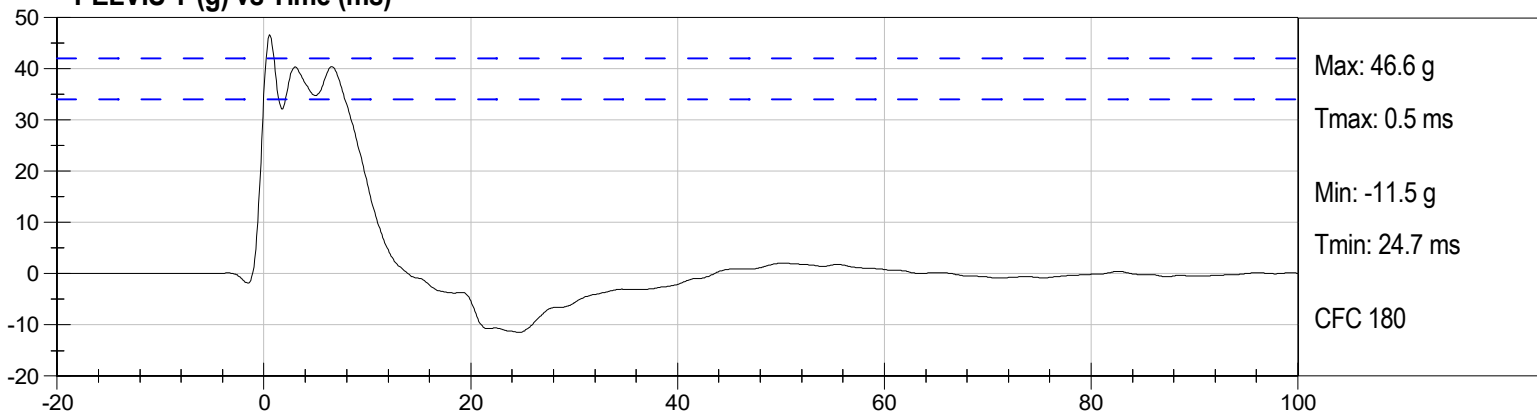
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	6.6 to 6.8	6.77	Pass
Peak Probe Acceleration	g	38 to 47	42	Pass
Peak Pelvis Y Acceleration after 6 ms	g	34 to 42	40.4	Pass
Acetabulum Force	N	3600 to 4300	3967	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
PELVIS Y	Endevco	P82673	05/27/2025	11/26/2025
ACETABULUM FY	FTSS	ACG4285FY	05/28/2025	5/28/2026

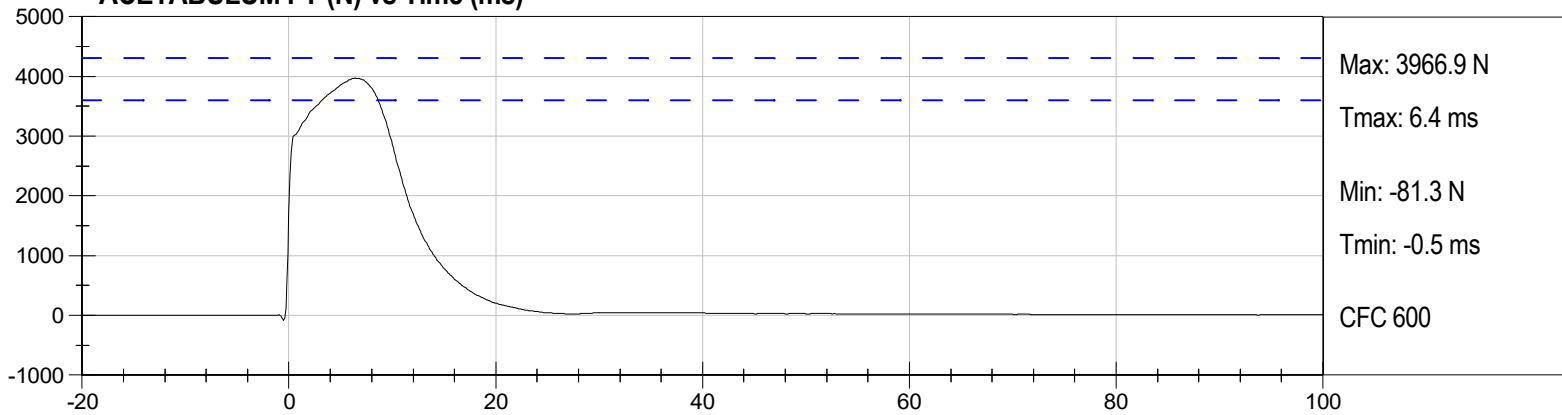
PROBE (g) vs Time (ms)



PELVIS Y (g) vs Time (ms)



ACETABULUM FY (N) vs Time (ms)





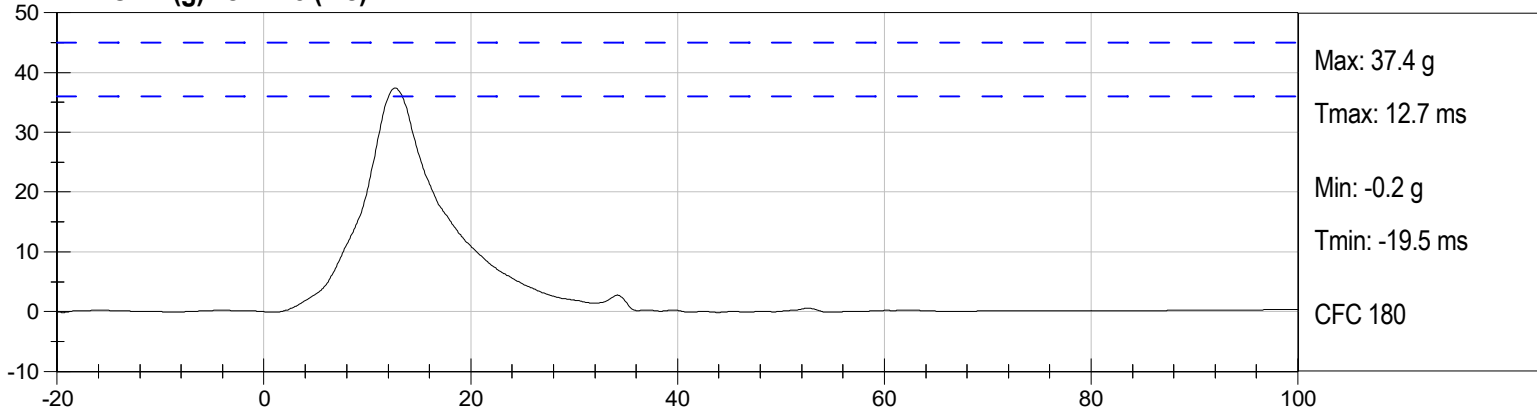
Iliac Impact Test
SID IIs
ATD Serial No: 306

Test Date: 08/07/2025
Test ID: D252318
Test Technician: Jonah Pulokas

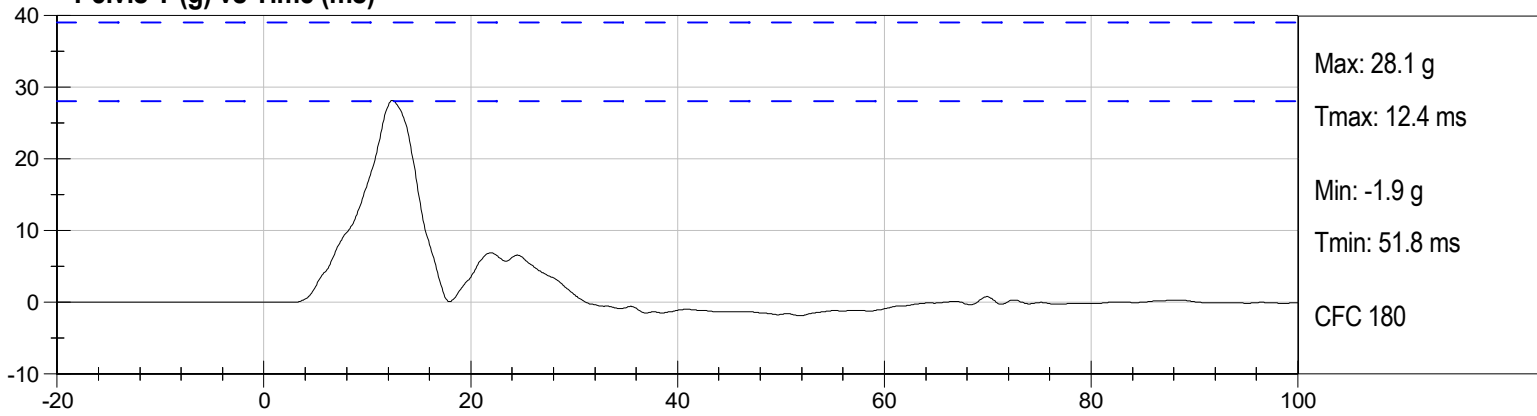
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Impact Velocity	m/s	4.2 to 4.4	4.27	Pass
Peak Probe Acceleration	g	36 to 45	37	Pass
Peak Pelvis Y Acceleration	g	28 to 39	28	Pass
Iliac Force	N	4100 to 5100	4257	Pass

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
PROBE	Endevco	P79577	03/21/2025	9/20/2025
Pelvis Y	Endevco	P82673	05/27/2025	11/26/2025
ILIUM CREST FY	FTSS	IWG3023FY	05/28/2025	5/28/2026

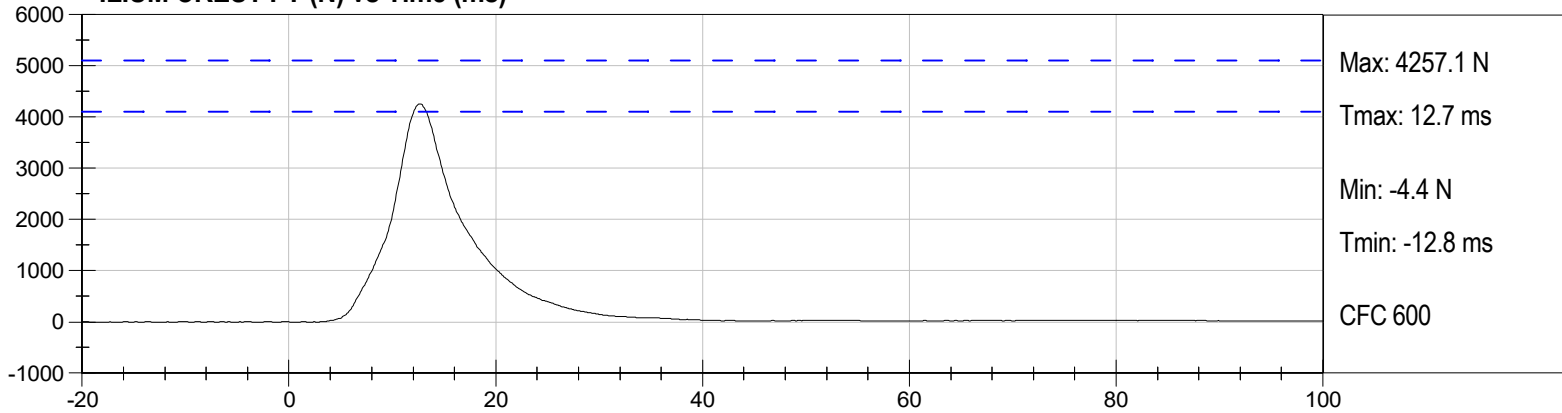
PROBE (g) vs Time (ms)



Pelvis Y (g) vs Time (ms)



ILIUM CREST FY (N) vs Time (ms)





SID-IIs Pelvis Plug Certification Test

Plug S/N 16359

Test Number 22926

Report Number 22983

Test Date 5/20/2022 1:33:13 PM

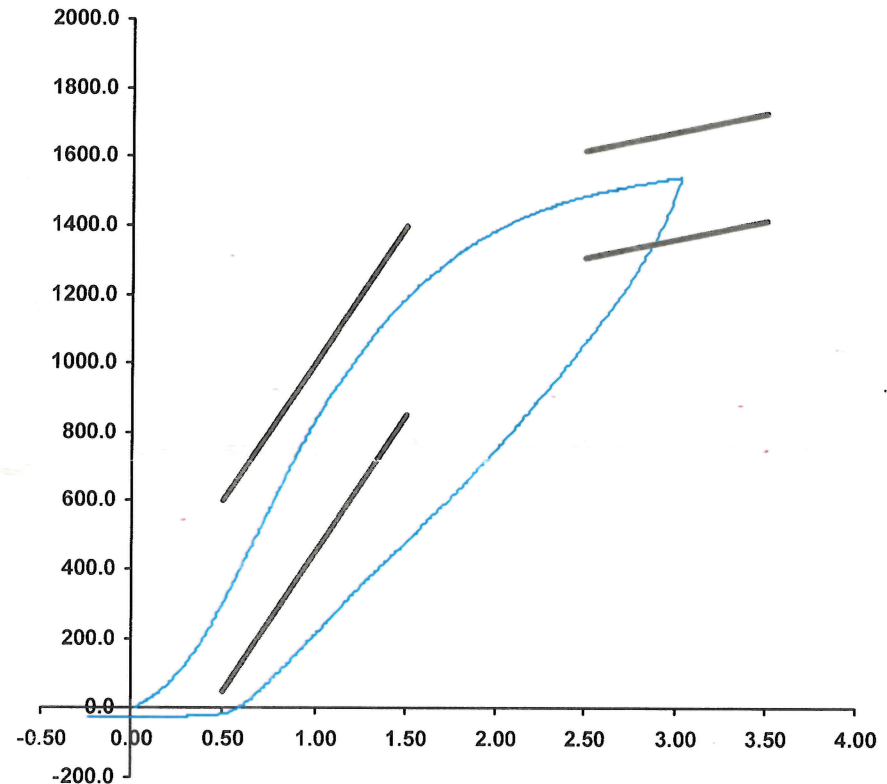
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	310	50	600
Force @ 1.5 mm (N)	1,187	850	1,400
Force @ 2.5 mm (N)	1,487	1,306	1,618
Force @ 3.0 mm (N)	1,540	1,361	1,673

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

20-May-22

SACO Research

By : DC

Date : 5/20/2022



SID-IIs Pelvis Plug Certification Test

Plug S/N 16339

Test Number 22906

Report Number 22963

Test Date 5/20/2022 11:58:16 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	300	50	600
Force @ 1.5 mm (N)	1,175	850	1,400
Force @ 2.5 mm (N)	1,484	1,306	1,618
Force @ 3.0 mm (N)	1,540	1,361	1,673

Testing Machine STM-20 5965542

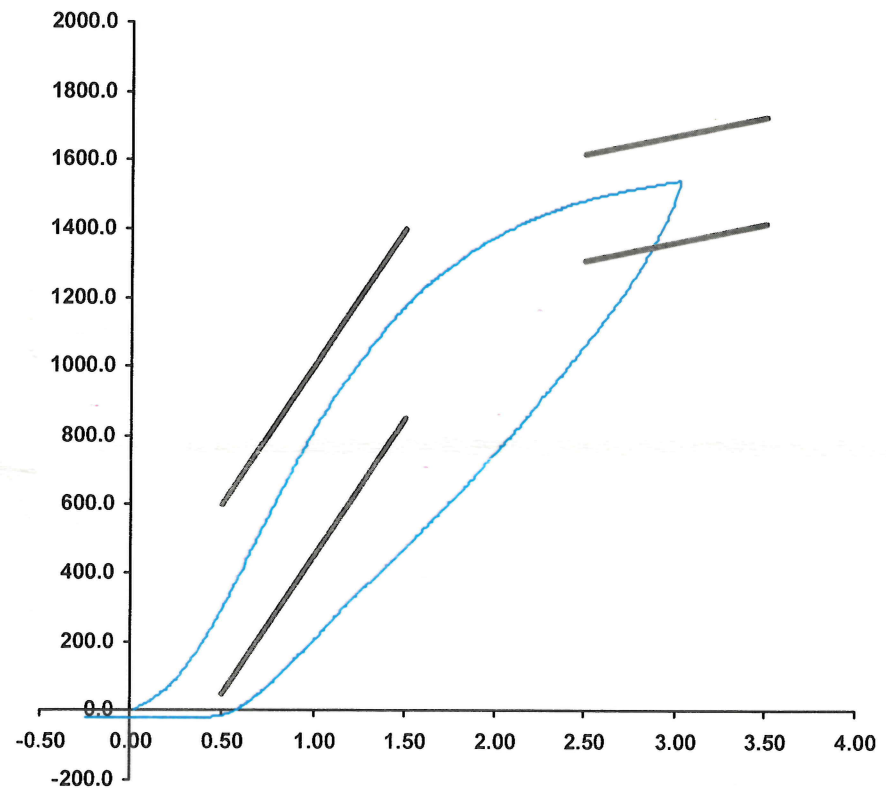
Load Cell S/N (FI360947), Units (LBS) 1000

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

20-May-22

SACO Research

By :

DC

Date :

5/20/2022

SACO Research 41735 Elm St, #401 Murrieta, CA 92562 Tel 310-694-2082 FAX

C-104

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

Table 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N F032		
			Serial Number	Manufacturer	Calibration Date
Head CG Accelerometers		X	P79568	Endevco	05/16/2025
		Y	P79569	Endevco	05/16/2025
		Z	T30941	Endevco	05/16/2025
		Xr	P86797	Endevco	05/16/2025
		Yr	P94957	Endevco	05/16/2025
		Zr	P97381	Endevco	05/16/2025
Thorax Rib Displacement Potentiometers	Upper	Y	G236	Honeywell	05/15/2025
	Middle	Y	G368	Honeywell	05/15/2025
	Lower	Y	G164	Honeywell	05/15/2025
Abdomen Load Cells	Forward	Y	ABG1532	Denton	01/20/2025
	Middle	Y	ABG1534	Denton	01/20/2025
	Rear	Y	ABG1535	Denton	01/20/2025
Lower Spine Accelerometers (T12)		X	P79574	Endevco	05/16/2025
		Y	T14094	Endevco	05/16/2025
		Z	P82603	Endevco	05/16/2025
Public Symphysis Load Cell		Y	PG461	Denton	01/20/2025

Table 2 – Dummy Instrumentation (SID-IIs)

			SID-IIs S/N 306			
			Serial Number	Manufacturer	Calibration Date	
Head CG Accelerometers			X	P79003	Endevco	05/27/2025
			Y	P79445	Endevco	05/27/2025
			Z	P79724	Endevco	05/27/2025
			Xr	P84999	Endevco	05/27/2025
			Yr	P85000	Endevco	05/27/2025
			Zr	P85001	Endevco	05/27/2025
Head Angular Rate Sensors			X	ARS7442	DTS	07/15/2025
			Y	ARS7475	DTS	07/15/2025
			Z	ARS7516	DTS	07/15/2025
Displacement Potentiometers	Thoracic Rib	Upper	Y	G033	FTSS	05/28/2025
		Middle	Y	G2403	Servo	05/28/2025
		Lower	Y	G1270	FTSS	05/28/2025
	Abdominal Rib	Upper	Y	G032	FTSS	05/28/2025
		Lower	Y	MJ5171	Medius	05/28/2025
Lower Spine Accelerometers (T12)			X	P96332	Endevco	05/27/2025
			Y	P96335	Endevco	05/27/2025
			Z	P96341	Endevco	05/27/2025
Acetabulum Load Cell			Y	ACG4285	FTSS	05/28/2025
Iliac Wing Load Cell			Y	IWG3023	FTSS	05/28/2025
Pelvis Plug (struck side)				16359	SACO	05/20/2022
Pelvis Plug (non-struck side)				16339	SACO	05/20/2022

Table 3 – Vehicle Instrumentation

			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	T45560	Endevco	03/19/2025
	Vehicle Center of Gravity	Y	T45556	Endevco	03/19/2025
	Vehicle Center of Gravity	Z	T42707	Endevco	03/18/2025
2	Right Sill at Front Seat	X	T45542	Endevco	03/14/2025
	Right Sill at Front Seat	Y	T45516	Endevco	03/14/2025
	Right Sill at Front Seat	Z	T44519	Endevco	02/16/2025
3	Right Sill at Rear Seat	X	T43516	Endevco	05/14/2025
	Right Sill at Rear Seat	Y	T43462	Endevco	02/16/2025
	Right Sill at Rear Seat	Z	T33443	Endevco	04/21/2025
4	Left Sill at Front Door	Y	T45275	Endevco	02/05/2025
5	Left Sill at Rear Door	Y	T45293	Endevco	06/25/2025
6	Left A-Post Lower	Y	T45179	Endevco	01/27/2025
7	Left A-Post Middle	Y	T45148	Endevco	01/26/2025
8	Left B-Post Lower	Y	T43446	Endevco	04/10/2025
9	Left B-Post Middle	Y	T42814	Endevco	04/16/2025
10	Front Seat Track	Y	T42704	Endevco	06/11/2025
11	Rear Seat Track or Structure	Y	A390910	MSI	06/16/2025
12	Right Rear Occ. Compartment	Y	T32202	Endevco	07/18/2025
13	Engine Block	X	T41125	Endevco	06/25/2025
	Engine Block	Y	T41183	Endevco	06/25/2025
14	Rear Floorpan Above Axle	X	T42768	Endevco	06/12/2025
	Rear Floorpan Above Axle	Y	T43432	Endevco	06/12/2025
	Rear Floorpan Above Axle	Z	T43427	Endevco	06/12/2025

Table 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	PCB2151D	PCB	01/26/2025
MDB Center of Gravity	Y	PCB1280D	PCB	04/21/2025
MDB Center of Gravity	Z	PCB2128D	PCB	01/26/2025
Left Frame at Rear Axle Centerline	X	PCB1796D	PCB	04/21/2025
Left Frame at Rear Axle Centerline	Y	PCB1847D	PCB	04/21/2025