

FINAL REPORT NUMBER: SINCAP-TRC-24-003

**NEW CAR ASSESSMENT PROGRAM (NCAP)
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST**

**GM KOREA COMPANY
2024 Chevrolet Trax SUV
NHTSA NUMBER: M20240105**

**PREPARED BY:
Transportation Research Center Inc.
10820 State Route 347
P. O. Box B-67
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Report Date: December 10, 2024

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NRM-110
1200 New Jersey Ave, SE
Washington, D.C. 20590**

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Report Prepared By: ILO Project Operations Group

Report Approved By: 

John Shultz

Approval Date: December 10, 2024

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

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

Date: _____

Technical Report Documentation Page

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16. Abstract This 55 / 28 km/h 90° Moving Deformable Barrier SINCAP Side Impact Test was conducted on the subject 2024 Chevrolet Trax SUV, in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on June 27, 2024. The impact velocity of the Moving Deformable Barrier (MDB) was 62.24 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 21.6° C. The target vehicle post-test maximum crush was 245 mm at Level 3. The test vehicle's performance was as follows: <table border="1"> <thead> <tr> <th colspan="4">Driver ATD (ES-2re)</th> </tr> <tr> <th>Measurement Description</th> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>170.760</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>44</td> <td>30.700</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>1279.380</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>-1274.950</td> </tr> <tr> <td>Lower Spine Resultant Acceleration</td> <td>G</td> <td>82*</td> <td>N/A</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="4">Passenger ATD (SID-IIs)</th> </tr> <tr> <th>Measurement Description</th> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>377.690</td> </tr> <tr> <td>Lower Spine Resultant Acceleration</td> <td>G</td> <td>82</td> <td>67.670</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>1803.600</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>24.600</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45*</td> <td>26.270</td> </tr> </tbody> </table> * Proposed IARV The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.				Driver ATD (ES-2re)				Measurement Description	Units	IARV	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	170.760	Maximum Thoracic Rib Deflection	mm	44	30.700	Total Abdominal Force	N	2500	1279.380	Pubic Symphysis Force	N	6000	-1274.950	Lower Spine Resultant Acceleration	G	82*	N/A	Passenger ATD (SID-IIs)				Measurement Description	Units	IARV	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	377.690	Lower Spine Resultant Acceleration	G	82	67.670	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1803.600	Maximum Thoracic Rib Deflection	mm	38*	24.600	Maximum Abdominal Rib Deflection	mm	45*	26.270
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SECTION 1

TEST PURPOSE AND PROCEDURE

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test was conducted as part of the MY 2024 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. 693JJ920D000018. The purpose of this test is to generate comparative side impact performance in a 2024 Chevrolet Trax SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated March 2020.

SECTION 2

SUMMARY OF TEST RESULTS

A 2024 Chevrolet Trax 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 62.24 km/h (38.67 mph). 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 the Transportation Research Center Inc. in East Liberty, Ohio, on June 27, 2024. Pre-test and post-test photographs of the test vehicle and 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 Side Impact Laboratory Test Procedure, dated March 2020. The side impact event was documented by 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 tri-axial 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) tri-axial accelerometers

Pubic symphysis y-axis load cell

PASSENGER ATD (SID-IIs)

Primary and redundant head CG triaxial accelerometers

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) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

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

Dummy injury readings were recorded as follows:

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	170.760
Maximum Thoracic Rib Deflection	mm	44	30.700
Combined Abdominal Force	N	2500	1279.380
Pubic Symphysis Force	N	6000	-1274.950
Lower Spine (T12) Resultant Acceleration ¹	G	82*	N/A

* Proposed IARV

¹ T12 Z accelerometer failed around early in the event affecting the driver spine resultant value.

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	377.690
Lower Spine (T12) Resultant Acceleration	G	82	67.670
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1803.600
Maximum Thoracic Rib Deflection	mm	38*	24.600
Maximum Abdominal Rib Deflection	mm	45*	26.270

* 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		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Side Pelvis Airbag	No	N/A	No	N/A
Knee Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	No	No	N/A
Other	No	N/A	No	N/A

GENERAL COMMENTS

All doors remained closed throughout the test. No fuel spillage occurred during the impact or the static rollover test which followed. Injury values for both ATDs were within the established performance thresholds with the exception of Driver Lower Spine (T12) Resultant Acceleration. T12 Z accelerometer failed around early in the event affecting the driver spine resultant value

Driver Lower Spine T12 Acceleration (Z): CF @ 3.6 ms

Left Lower A-Post Acceleration (Y): CF @ 13.0 ms

Left Middle A-Post Acceleration (Y): CF @ 18.0 ms

Left Lower B-Post Acceleration (Y): @ 4.0 ms

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: SINCAP Side Impact

NHTSA No.: M20240105
Test Date: 6/27/2024

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20240105
Model Year	2024
Make	Chevrolet
Model	Trax
Body Style	MPV
VIN	KL77LFE22RC201930
Body Color	Summit White
Odometer Reading (km/mi)	7 mi
Engine Displacement (L)	1.2
Type/No. Cylinders	Inline/3
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	FWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks (ADL)	Yes
Power Window Auto-Reverse	No
Other Optional Feature	N/A
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Passenger Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Passenger Load Limiter	No
Other	N/A

Does owner's manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	GM KOREA COMPANY
Date of Manufacture	12/23
Vehicle Type	MPV

GVWR (kg)	1880
GAWR Front (kg)	1060
GAWR Rear (kg)	1060

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity DSC)	2	3	N/A	5
Capacity Weight (VCW) (kg)				428.0
DSC x 68 (kg)				340.0
Cargo Weight (RCLW) (kg)				88.0

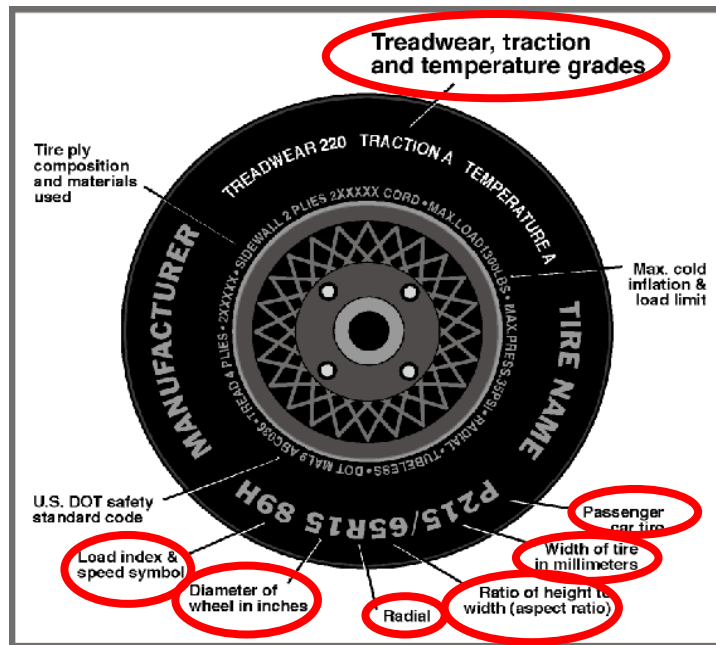
VEHICLE SEAT TYPE

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

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	240	240
Recommended Tire Size	225/60R17	225/60R17
Tire Size on Vehicle	225/60R17	225/60R17
Tire Manufacturer	Hankook	Hankook
Tire Model	Dynapro	Dynapro
Treadwear	460	460
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	99H	99H
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	15MJF BU HA 4823	15MJF BU HA 4823
DOT Safety Code Right	15MJF BU HA 4823	15MJF BU HA 4823

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	290	290	290	290
Tire Placard	kPa	240	240	240	240
Owner's Manual	kPa	240	240	240	240
As Tested	kPa	240	240	240	240

MDB TIRE SPECIFICATIONS

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21 kPa	207	207	207	207

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	422.8	262.6		459.2	358.2		468.8	366.4	
Right	kg	401.2	253.4		396.8	331.2		390.8	327.0	
Ratio	%	61.5	38.5		55.4	44.6		55.4	44.6	
Totals	kg	824.0	516.0	1340.0	856	689.4	1545.4	859.6	693.4	1553.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	1340.0	(A)
Actual Weight of 1 P572V ATD (SID-ILs) Dummy Used	kg	125.0	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	88.0	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1553.0	(A+B+C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)? ☒ YES ☐ NO

TEST VEHICLE ATTITUDES AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement
LF	mm	782	779	Yes
RF	mm	794	795	Yes
RR	mm	783	785	Yes
LR	mm	772	769	Yes
Vehicle CG (Aft of Front Axle)	mm	1207	1206	
Vehicle CG (Left(+)/Right(-) from Longitudinal Centerline)	mm	59	45	

***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. Indicate "Yes" or "No" for "Meets Requirement".

Test height adjustable suspension setting, if applicable:

N/A

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Ballast: Steel plate	71.0
Removed: None	0.0

TEST SURFACE MARKINGS

	Distance from 63° Impact Angle Line (mm)
Fore 25 mm target	900
Aft 25 mm target	906
Pre-Impact Angle Line	335

Parallel Track Target	X Location (mm)	Y Location (mm)
A	0	0
B	1620	3420
C	3985	3420
D	3985	0

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

SEAT POSITIONING

The driver 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	16.9	12.9	14.9
Front Passenger Seat	13.0	13.0	13.0
Front Center Seat*	N/A	N/A	N/A
Struck Side Rear Seat	13.7	13.7	13.7
Non-Struck Side Rear Seat	12.7	12.7	12.7
Rear Center Seat*	10.7	10.7	10.7

* If applicable.

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore/Aft	Forward-Most
Driver Seat	14.9	188	Max	N/A	N/A	N/A
			Mid	184	188	193
			Min	N/A	N/A	N/A
Front Passenger Seat	13.0	186	Max	N/A	N/A	N/A
			Mid	184	186	192
			Min	N/A	N/A	N/A
Front Center Seat*	N/A	N/A	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Struck Side Rear Seat	13.7	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	246	N/A
			Min	N/A	N/A	N/A
Non-Struck Side Rear Seat	12.7	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	233	N/A
			Min	N/A	N/A	N/A
Rear Center Seat*	10.7	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A

* If applicable.

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

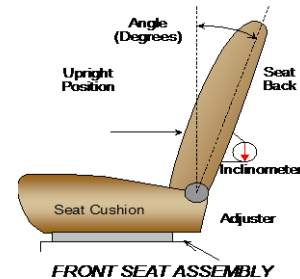
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents	mm	Detent
Driver Seat	260	26	130	13
Front Passenger Seat	260	26	130	13
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed	Fixed

* If applicable

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated seat back 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 Most Upright	
	Degrees	Detents	Degrees	Detent
Driver Seat w/ Seated Dummy	65.3	35	20.95	18
Front Passenger Seat	65.5	35	20.86	18
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat w/ Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed	Fixed

* If applicable

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total # of Positions	Placed in Position #
Driver Seat	1	1
Rear Seat	1	1

HEAD RESTRAINT ADJUSTMENT

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

	Total # of Positions	Placed in Position #
Driver Seat	5	5
Rear Seat	5	1

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

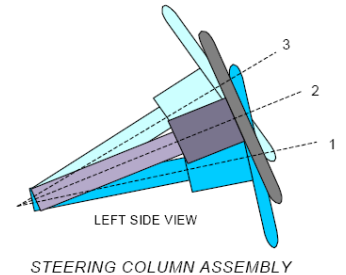
Test Vehicle: 2024 Chevrolet Trax SUV
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STEERING COLUMN ADJUSTMENT

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.

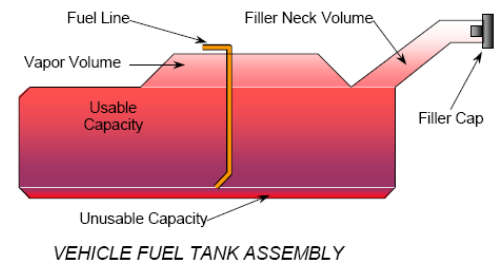
	Degrees	Fore/Aft Position (mm)
Lowermost, Position No. 1	19.0	
Geometric Center, Position No. 2	21.1	
Uppermost, Position No. 3	23.2	
Telescoping Steering Wheel Travel		40
Test Position	21.1	20



FUEL PUMP

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

Fuel pump will run for approximately 3 seconds when the key or push start button is switched to "On" position, then, it will stop and will not resume operation unless the engine is cranking or running



FUEL TANK CAPACITY

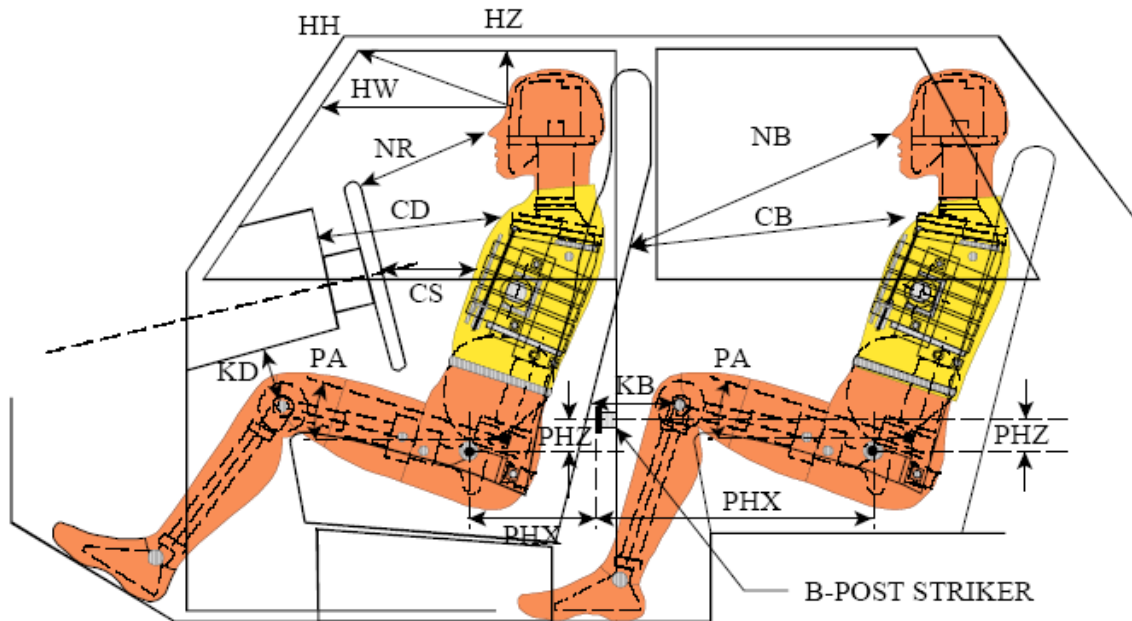
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	50.0
Usable Capacity of "Optional Tank" (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	50.0
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	46.5
Actual Amount of Solvent Used in Test	46.5
1/3 of Usable Capacity	16.7

Is the Actual Amount of Solvent Used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in on Form No. 1? ☒ YES ☐ NO

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



LEFT SIDE VIEW

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

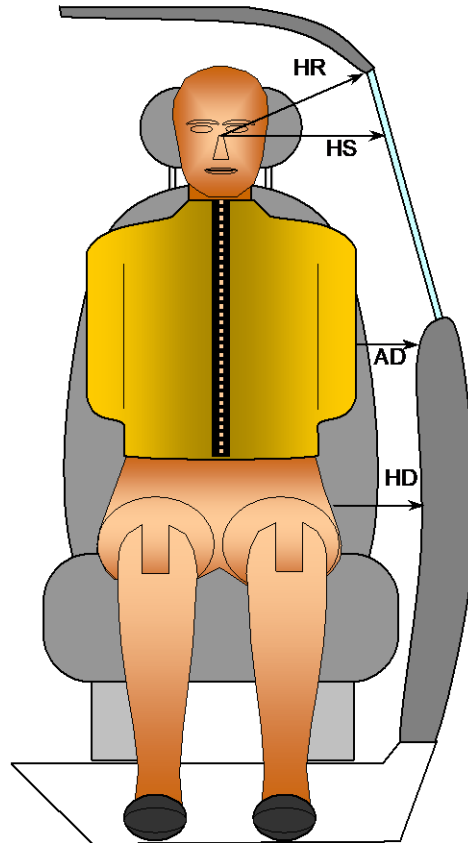
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle	Length (mm)	Angle
HH		Header to Header	407			
HW		Header to Windshield	710			
HZ	HZ	Head to Roof Liner	195		275	
NR	NB	Nose to Rim/Seat Back	452		582	
CD	CB	Chest to Dash/Seat Back	596		563	
CS		Chest to Steering Wheel	388			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	223	0.0	328	0.0
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	194	0.0	326	0.0
PAX°	PAX°	Pelvic Tilt Angle X		1.4		0.65
	PAY°	Pelvic Tilt Angle Y				22.25
PHX	PHX	Hip Point to Striker (X-Axis)	159		168	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	142		249	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



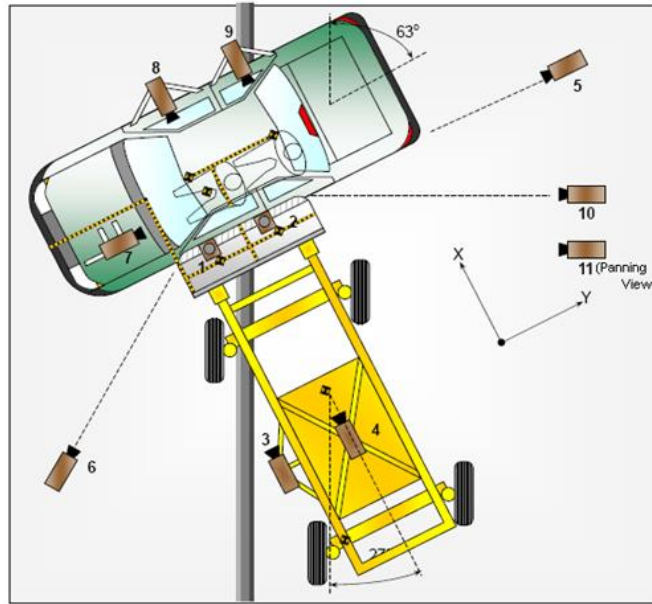
FRONT VIEW OF DUMMY

Code	Description	Units	Driver	Passenger
HR	Head to Side Header	mm	240	264
HS	Head to Side Window	mm	335	352
AD	Arm to Door	mm	96	149
HD	H-Point to Door	mm	143	160

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: SINCAP Side Impact

NHTSA No.: M20240105
Test Date: 6/27/2024



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	1601	0	-5622	18.5	1000
2	Overhead Close-up	1452	0	-5891	28	1000
3	Left Impact Point (MDB)	1632	-920	-934	25	1000
4	Side Overall (MDB)	2310	0	-1389	20	1000
5	Rear	0	7517	-1656	20	1000
6	Left Front	0	-7412	-1578	20	1000
7	Driver Front (OB)				25	1000
8	Driver Side (OB)				8.5	1000
9	Passenger Side (OB)				8.5	1000
10	Real-time Left Rear				Zoom	30
11	Real-time Inrun				Zoom	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.

If applicable, explain why camera(s) did not operate as intended: N/A

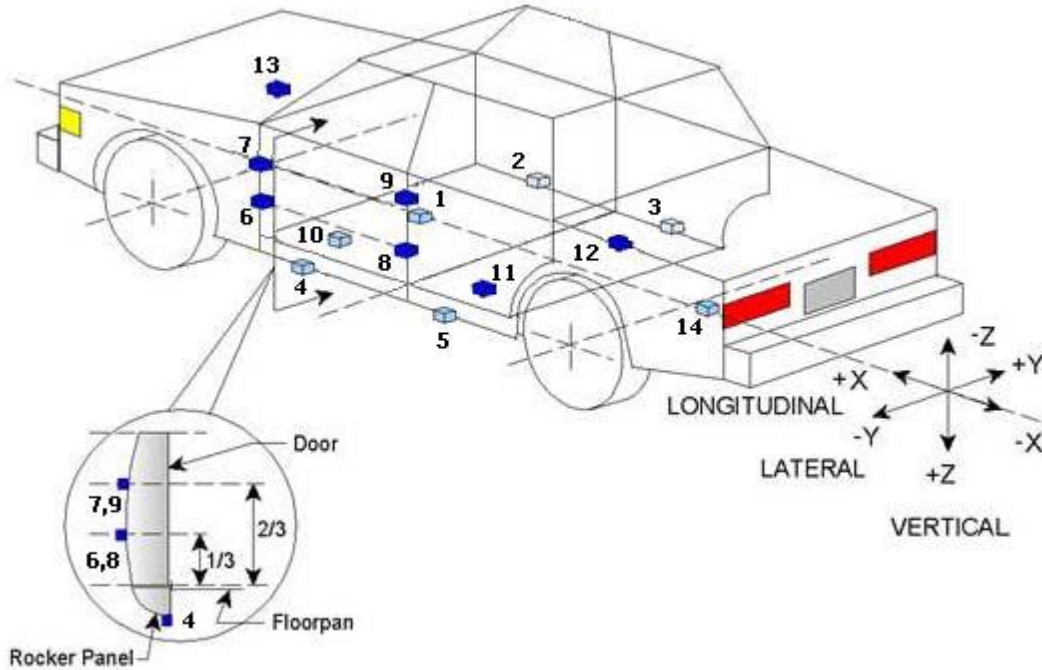
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MBD Accelerometers	5
TOTAL	60

DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



TEST VEHICLE ACCELEROMETER LOCATIONS

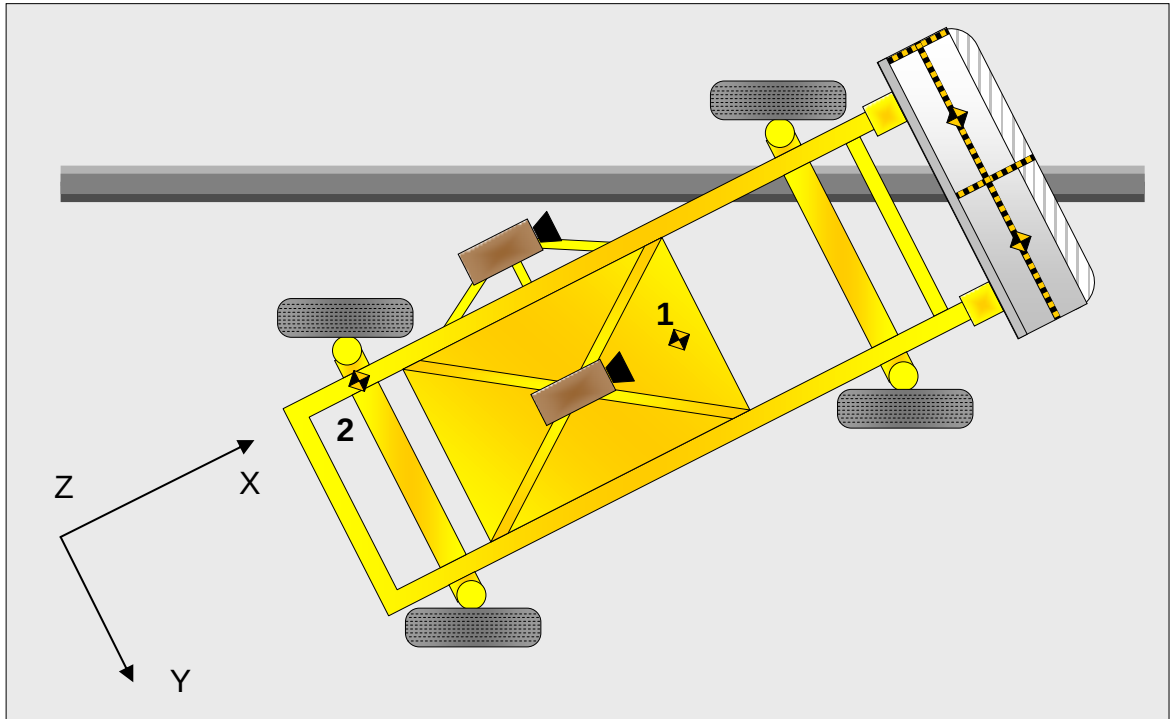
Loc. No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2634	92	-450
2	Right Sill at Front Seat	2554	699	-411
3	Right Sill at Rear Seat	1687	688	-419
4	Left Sill at Front Door	2561	-702	-401
5	Left Sill at Rear Door	1682	-670	-398
6	A-Post Lower	3085	-809	-619
7	A-Post Middle	3094	-786	-942
8	B-Post Lower	2066	-800	-618
9	B-Post Middle	2031	-791	-1012
10	Front Seat Track	2353	-525	-396
11	Rear Seat Structure	1700	-346	-475
12	Right Rear Occ. Compartment	1705	352	-465
13	Engine Block	3675	89	-869
14	Rear Above Axle	775	38	-454

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: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	MDB CG	-2196	0	-500
2	MDB Rear	-3585	-645	-620

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

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: SINCAP Side Impact

NHTSA No.: M20240105
Test Date: 6/27/2024

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	SCAB	SCAB
Top of Head	None	SCAB
Left Side of Head	SCAB	SCAB
Back of Head	SCAB	SCAB
Left Shoulder	SAB	Door Panel
Upper Torso	SAB, Bolster	Door Panel
Lower Torso	SAB, Bolster	Door Panel
Left Hip	SAB, Door Panel, Bolster	Door Panel, Bolster
Left Knee	Door Panel	None

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Trunk Lid
	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)	No	No	No	No	No

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	None	None	None	None
Seat Disengagement from Floor pan	None	None	None	None
Seat Back Movement from Initial Position	None	None	None	None
Seat Back Collapse	None	None	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	None
Sill Separation	None
Windshield Damage	None
Side Window Damage	None
Other Notable Effects	None

DATA SHEET NO. 8 (CONTINUED)
POST TEST OBSERVATIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2703
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		415
Actual Impact Point (Aft of Front Axle)	mm		402
Horizontal Offset (+ forward / - rearward)	mm	+/- 50 of Intended Impact point	+13
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact point	-5

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: SINCAP Side Impact

NHTSA No.: M20240105
Test Date: 6/27/2024

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel Base of Framework Carriage	2591
C.G. Location aft of Front Axle	1124

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	409.8	276.6	686.4
Right	kg	365.0	317.0	682.0
Ratio	%	56.6	43.4	100.0
Totals	kg	774.8	593.6	1368.4

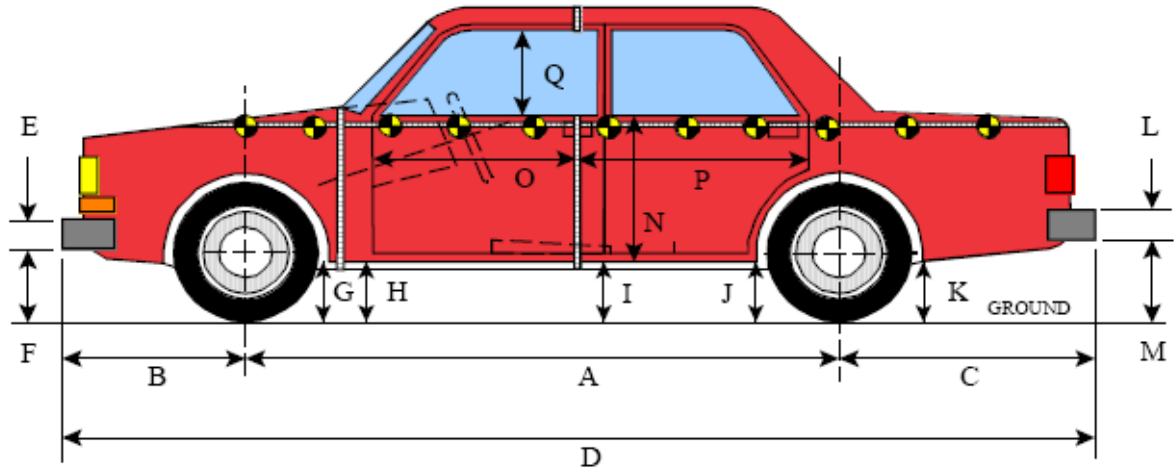
SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.27
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.24
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.0
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.0
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	27.0

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



LEFT SIDE VIEW

All MEASUREMENTS IN (mm) WITH TOLERANCE OF $\pm 3\text{mm}$

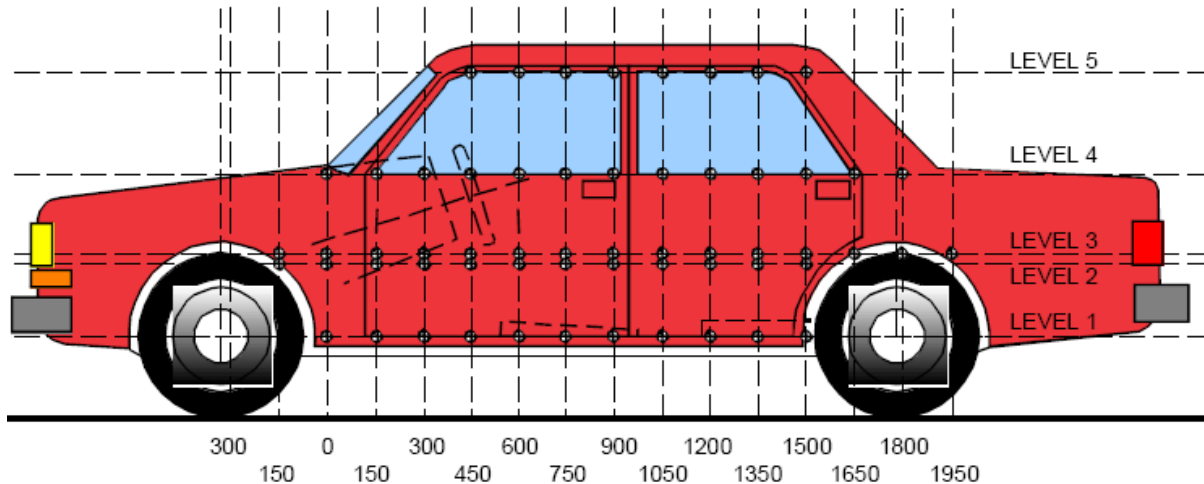
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Change
A	Wheelbase	2700	2715	15
B	Front Axle to Front Surface of Vehicle	920	909	-11
C	Rear Axle to Rear Surface of Vehicle	908	906	-2
D	Total Length at Centerline	4528	4531	3
E	Front Bumper Thickness	128	127	-1
F	Front Bumper Bottom to Ground	445	442	-3
G	Sill Height at Front Wheel Well	345	341	-4
H	Sill Height at Front Door Leading Edge	288	289	1
I	Sill Height at B-Pillar	303	292	-11
J1	Sill Height at Rear Wheel Well	288	288	0
J2	Pinch Weld Height at Rear Wheel Well	255	253	-2
K	Sill Height Aft of Rear Wheel Well	500	509	9
L	Rear Bumper Thickness	122	122	0
M	Rear Bumper Bottom to Ground	533	538	5
N	Sill Height to Window Bottom Sill	820	730	-90
O	Front Door Leading Edge to Impact CL	767	688	-79
P	Rear Door Trailing Edge to Impact CL	1329	1222	-107
Q	Front Window Opening	382	385	3
R	Right Side Length	4288	4290	2
S	Left Side Length	4288	4295	7
T	Vehicle Width	1820	1825	5
U	Front Wheel Track Width	1558	1553	-5
V	Rear Wheel Track Width	1570	1570	0

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance From Impact
1	Sill Top	386	109	450
2	Driver Hip Point	559	241	1500
3	Mid Door	682	245	1650
4	Window Sill	1039	128	1800
5	Window Top	1482	7	1350

NOTE: The above measurements were 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: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

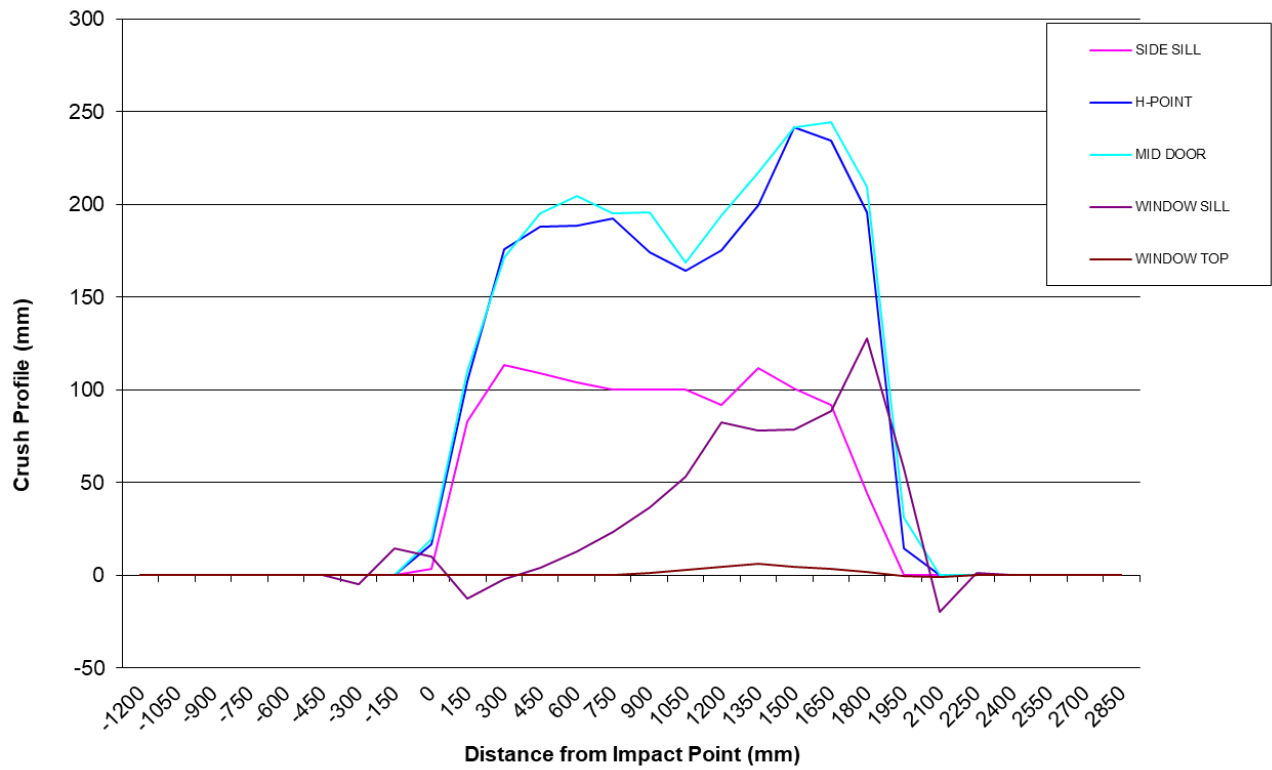
	Pre-Test					Post-Test					Crush				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-300	0	0	0	773	0	0	0	0	778	0	0	0	0	-5	0
-150	0	0	0	782	0	0	0	0	767	0	0	0	0	15	0
0	878	895	896	784	0	874	878	876	774	0	4	17	20	10	0
150	871	885	886	783	0	788	780	776	795	0	83	105	110	-12	0
300	875	877	880	782	0	762	701	708	784	0	113	176	172	-2	0
450	877	873	877	789	0	768	685	682	785	0	109	188	195	4	0
600	879	873	876	797	0	774	684	672	785	0	105	189	204	12	0
750	878	874	877	804	0	777	682	682	781	0	101	192	195	23	0
900	877	877	877	809	603	777	702	681	773	602	100	175	196	36	1
1050	876	880	878	814	607	776	716	710	761	604	100	164	168	53	3
1200	874	882	878	818	606	782	707	684	735	601	92	175	194	83	5
1350	872	886	880	820	606	761	687	663	742	599	111	199	217	78	7
1500	871	889	884	825	602	770	648	643	746	597	101	241	241	79	5
1650	870	891	890	831	597	778	656	645	743	594	92	235	245	88	3
1800	869	894	897	836	587	825	699	687	708	586	44	195	210	128	1
1950	0	899	904	841	573	0	885	872	783	573	0	14	32	58	0
2100	0	0	0	846	544	0	0	0	865	545	0	0	0	-19	-1
2250	0	0	0	848	0	0	0	0	847	0	0	0	0	1	0

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: 2024 Chevrolet Trax SUV
Test Program: SINCAP Side Impact

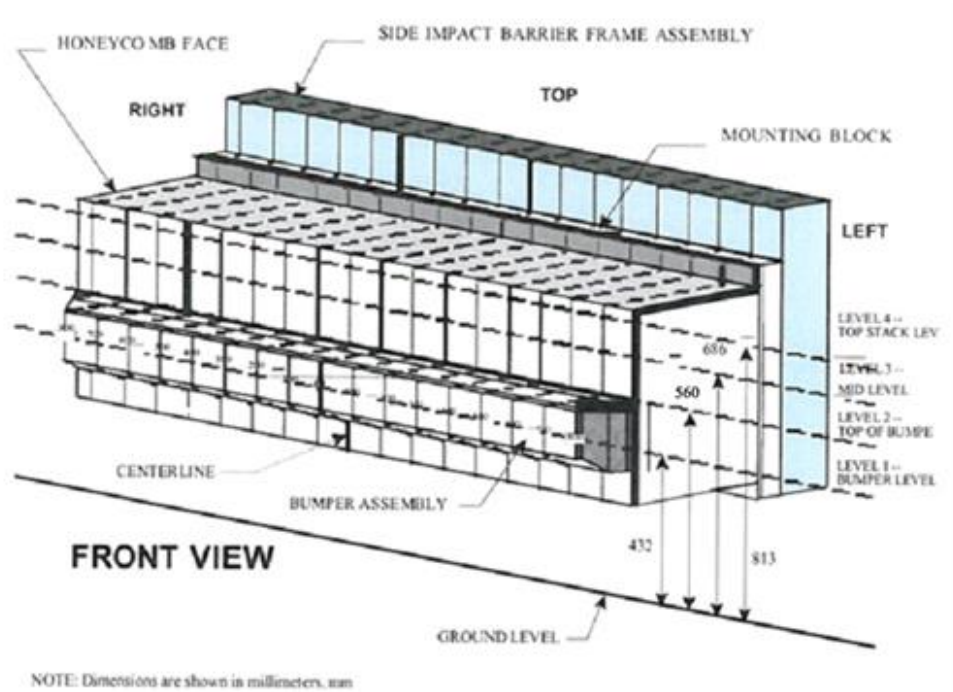
NHTSA No.: M20240105
Test Date: 6/27/2024



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	700	Left	216
B	Top of Bumper	560	800	Left	132
C	Mid-Level	686	800	Left	138
D	Top of Stack	813	800	Left	162

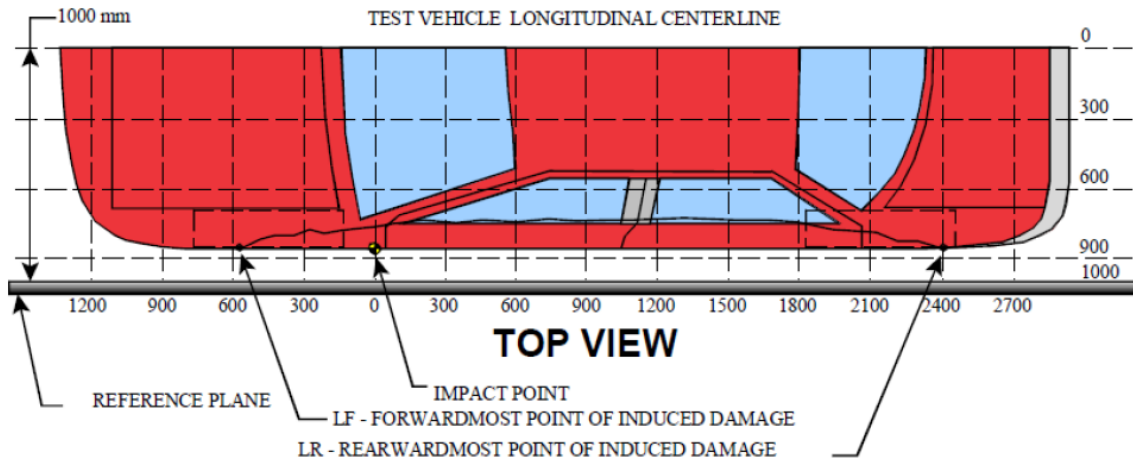
DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	202	203	196	193	192	190	188	186	184	183	182	180	179	182	194	216	167
2	99	96	93	86	86	85	86	82	74	68	69	61	50	40	42	68	132
3	50	22	23	25	27	34	59	67	35	23	20	19	21	29	55	83	138
4	51	13	9	15	28	48	61	49	36	35	38	40	44	49	58	94	162

DATA SHEET NO. 13
VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



MEASUREMENT CONVENTIONS:
 Forward of the impact point (towards front of vehicle) is considered negative (-).
 Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	2250	4	847	848	1
2	1800	3	687	897	210
3	1350	3	663	880	217
4	750	3	682	877	195
5	300	2	701	877	176
6 ¹	-150	1	767	782	0

1
MDB DAMAGE PROFILE DISTANCES

DPD	Distance From Center of MDB	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	800	1	304	471	167
2	500	1	302	484	182
3	200	1	303	485	182
4	200	1	298	486	188
5	500	1	293	486	193
6	800	1	267	469	202

¹ DPD 6 is defined as zero crush since the crush does not extend to the end of the vehicle.

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

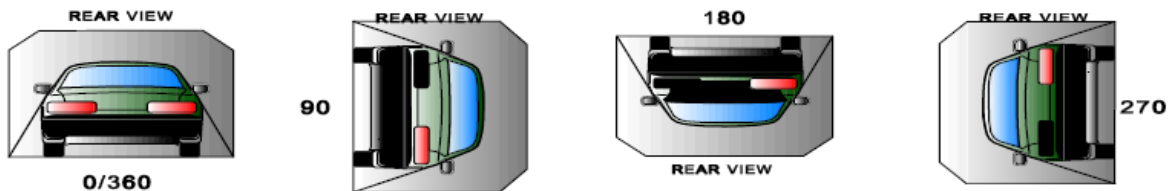
Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024

Test Time: 17:35 **Temperature:** 21.6C

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

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0 to 90	90	330	420
90 to 180	90	330	840
180 to 270	90	330	1260
270 to 360	90	330	1680

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0 to 90	0	0	0	N/A
90 to 180	0	0	0	N/A
180 to 270	0	0	0	N/A
270 to 360	0	0	0	N/A

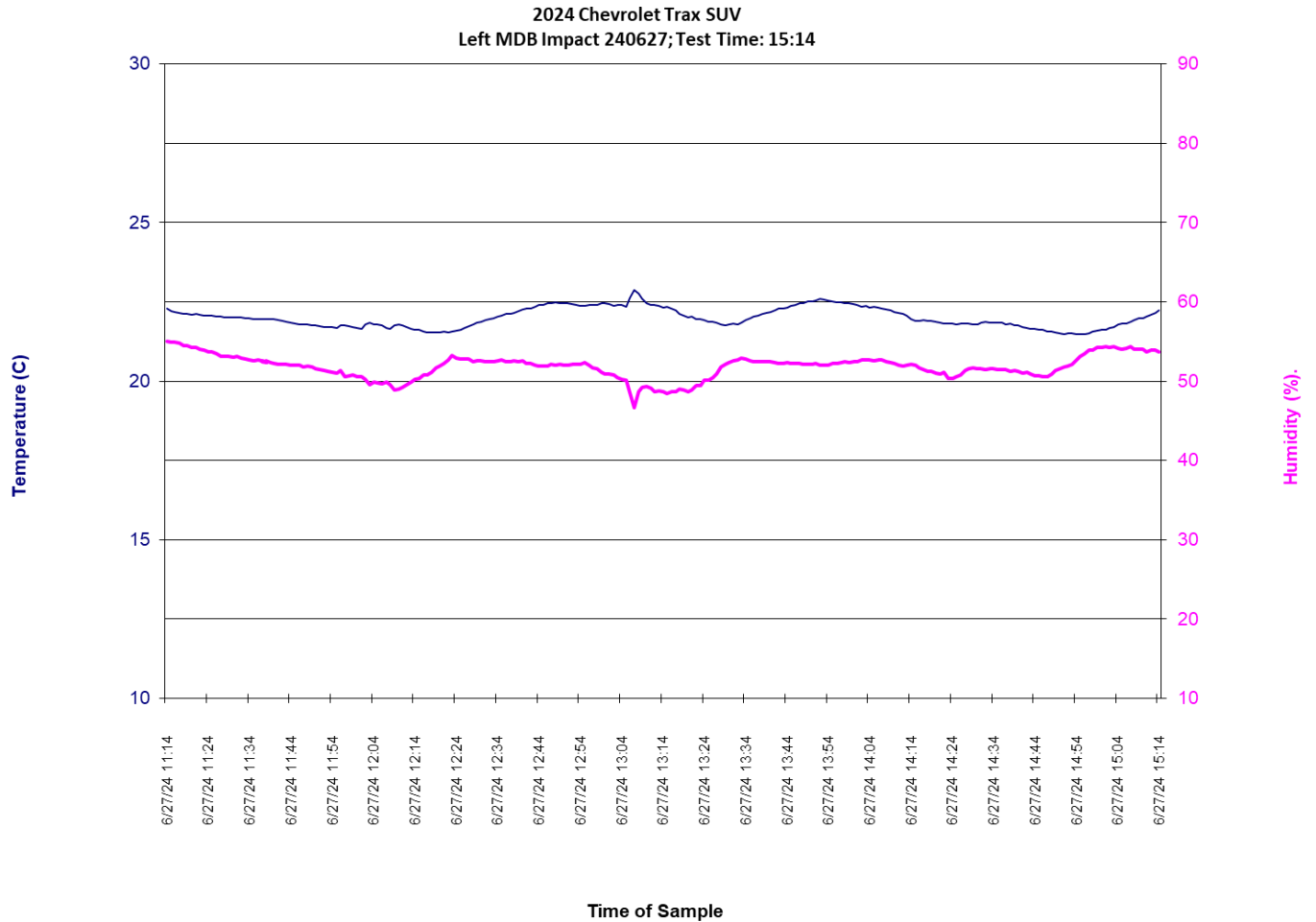
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0 to 90	None
90 to 180	None
180 to 270	None
270 to 360	None

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: SINCAP Side Impact

NHTSA No.: M20240105
 Test Date: 6/27/2024



APPENDIX A
PHOTOGRAPHS

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102	Monroney Label	A-58
103	Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-58
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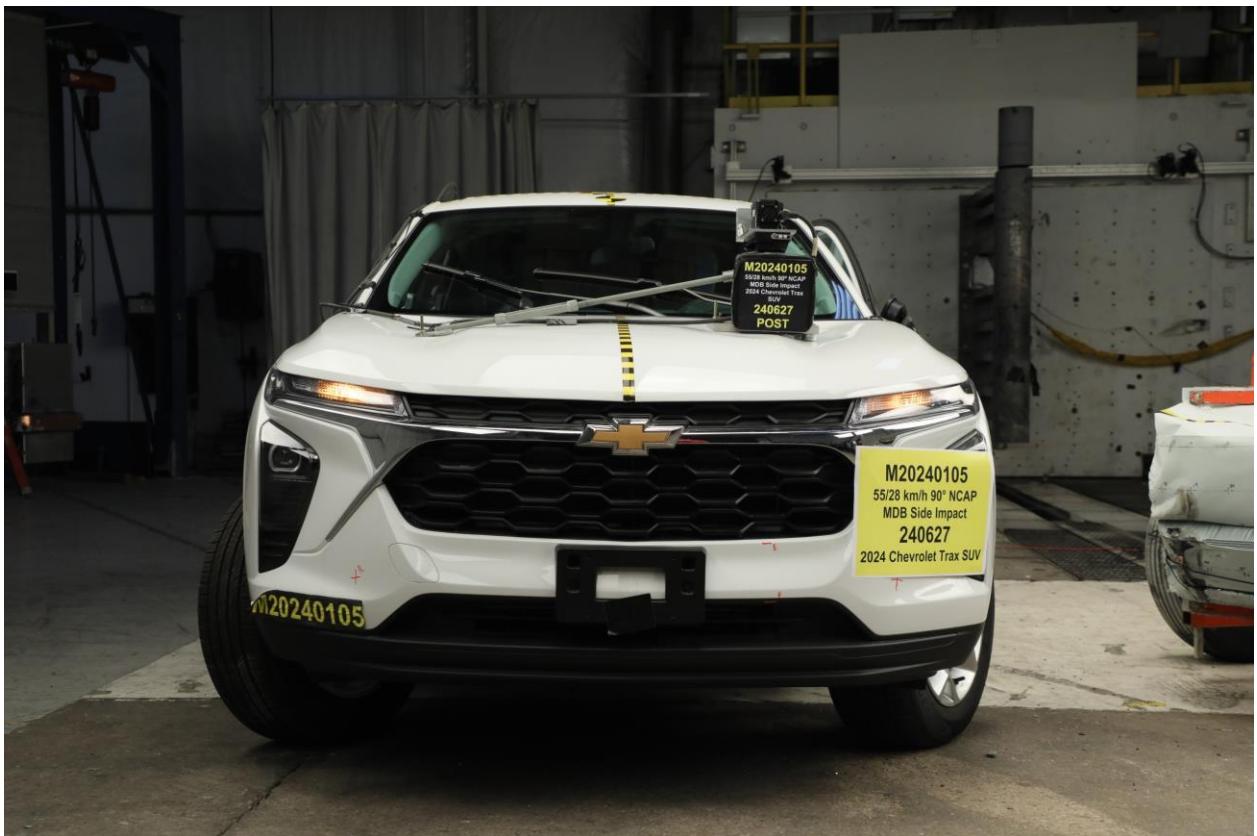
001 As-Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



002 As-Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle



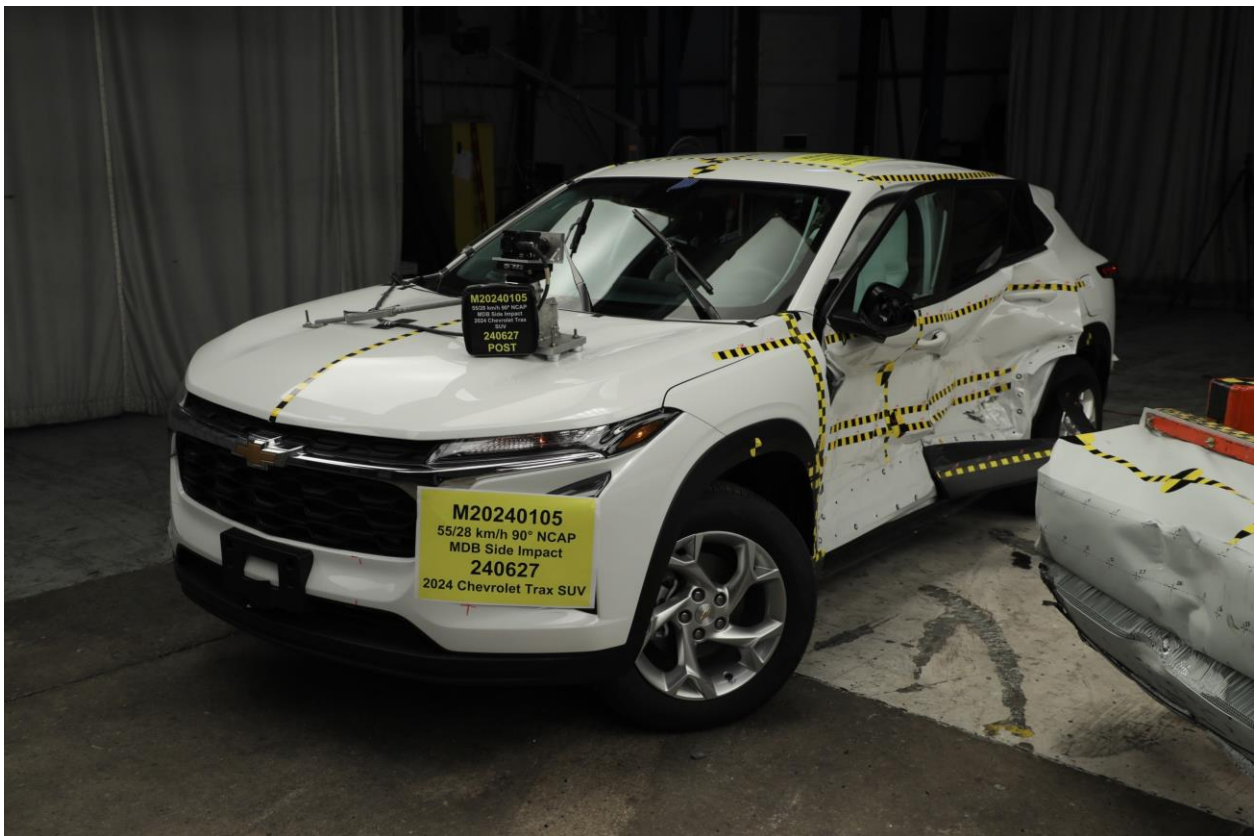
003 Pre-Test Frontal View of Test Vehicle



004 Post-Test Frontal View of Test Vehicle



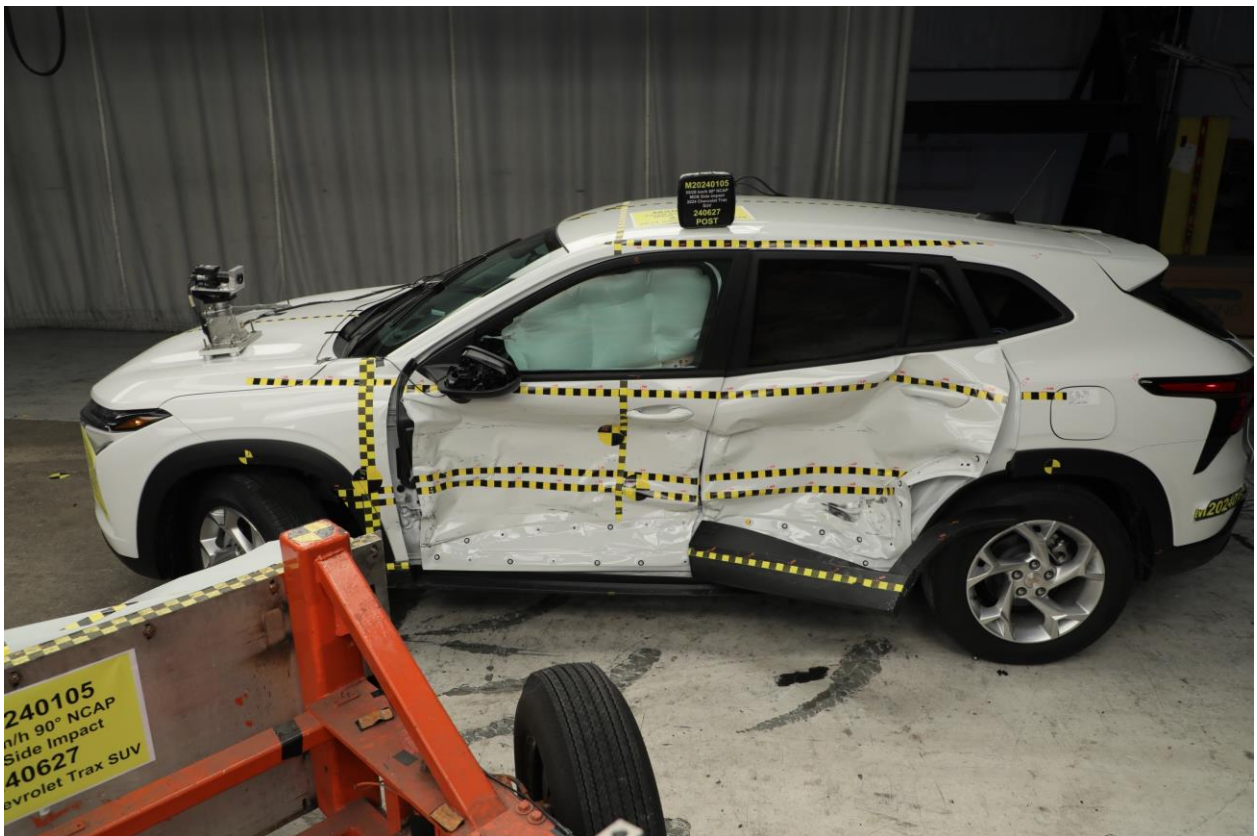
005 Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



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



007 Pre-Test Left Side View of Test Vehicle



008 Post-Test Left Side View of Test Vehicle



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



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



011 Pre-Test Rear View of Test Vehicle



012 Post-Test Rear View of Test Vehicle



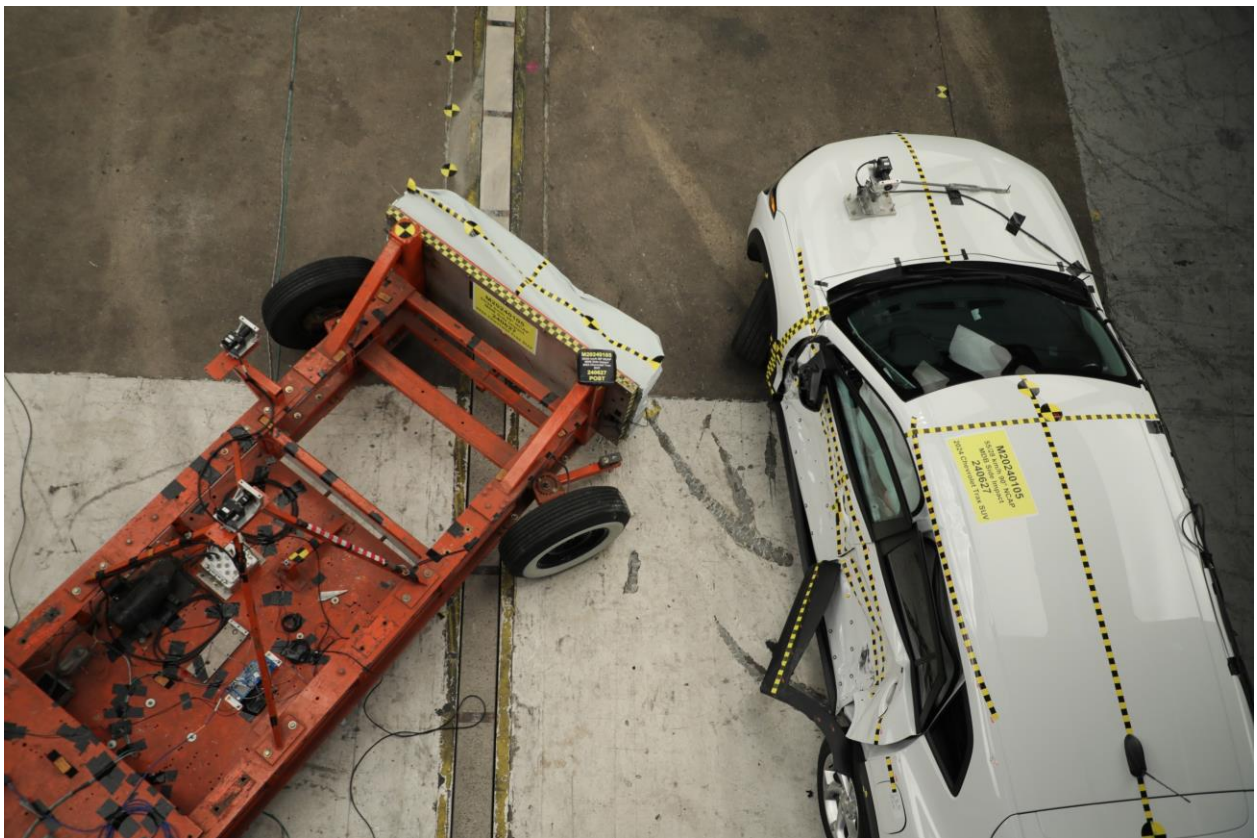
013 Pre-Test Right Side View of Test Vehicle



014 Post-Test Right Side View of Test Vehicle



015 Pre-Test Overhead View of Test Area



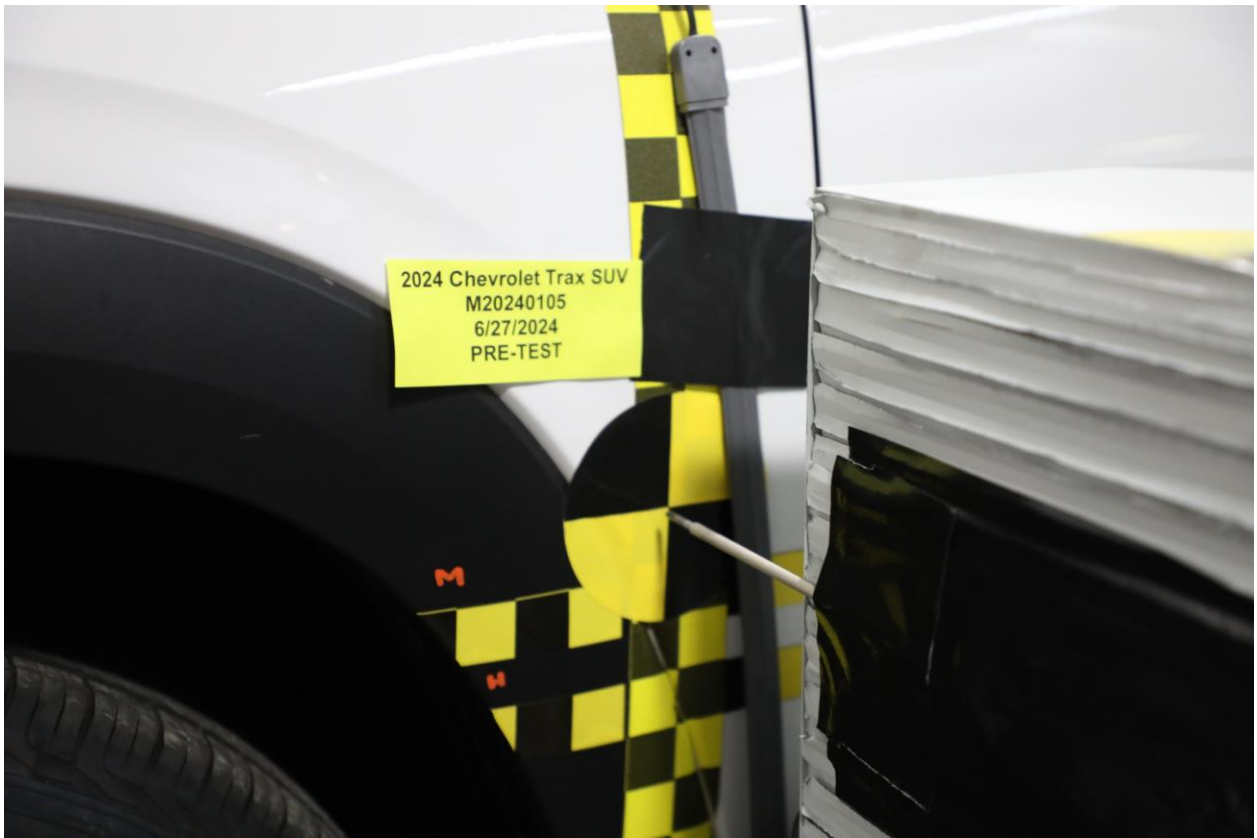
016 Post-Test Overhead View of Test Area



017 Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



018 Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle



019 Pre-Test Close-Up View of Impact Point Target



020 Post-Test Close-Up View of Impact Point Target



021 Pre-Test Left Front Door Latch Close-Up



022 Post-Test Left Front Door Latch Close-Up



023 Pre-Test Left Rear Door Latch Close-Up



024 Post-Test Left Rear Door Latch Close-Up



025 Pre-Test Front Close-Up View of Driver Dummy



026 Post-Test Front Close-Up View of Driver Dummy



027 Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking

Intentionally Left Blank



028 Pre-Test Left Side View of Driver Dummy Shoulder and Door Top



029 Post-Test Left Side View of Driver Dummy Shoulder and Door Top



030 Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



031 Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



032 Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning



033 Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



034 Pre-Test Placement of Driver's Dummy Feet



035 Pre-Test View of Belt Anchorage for Driver Dummy



036 Pre-Test Left Side View of Steering Wheel



037 View of Disengaged Parking Brake



038 Pre-Test View of Parking Brake



039 Pre-Test Close-Up Left Side View of Driver Seat Track



040 Pre-Test Close-Up Left Side View of Driver Seat Back



041 Pre-Test Close-Up View of Driver Seat Back or Head Restraint



042 Pre-Test Driver Dummy and Door Clearance View



043 Post-Test Driver Dummy and Door Clearance View



044 Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



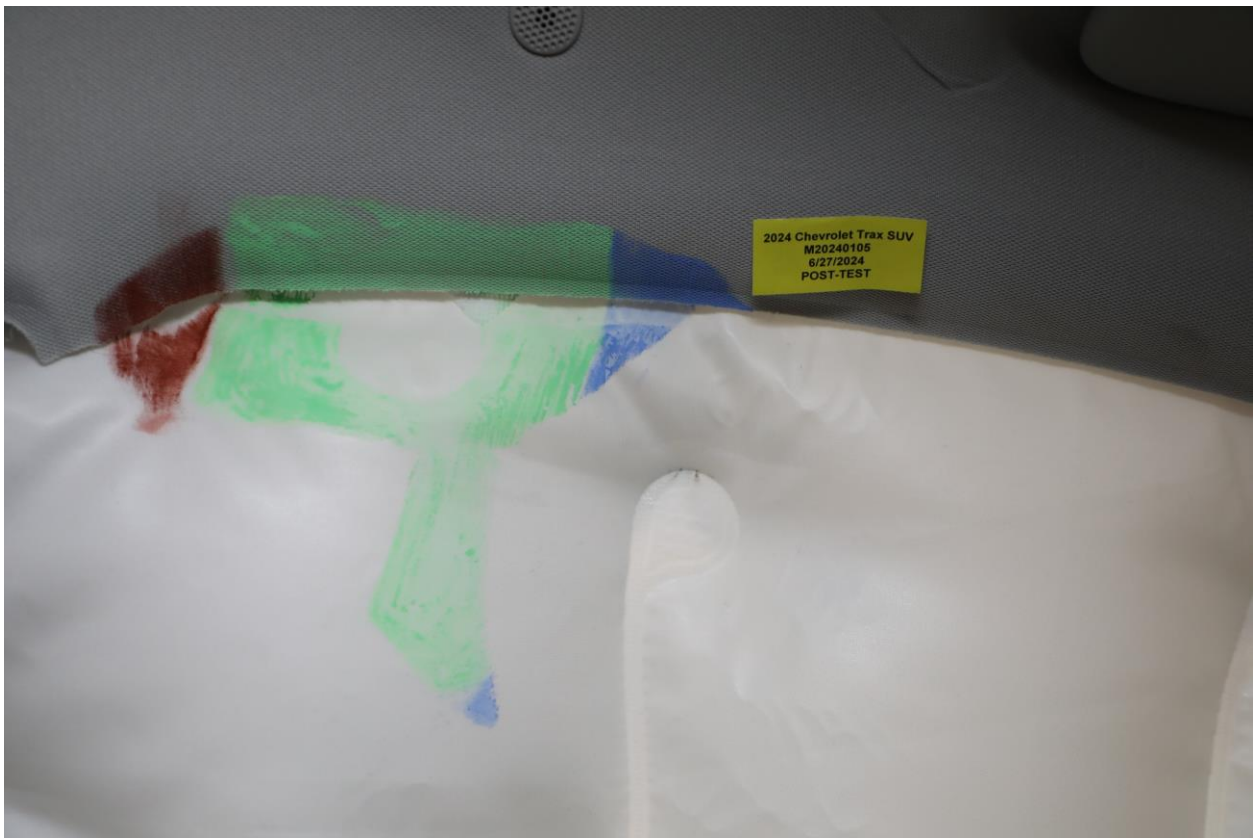
045 Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



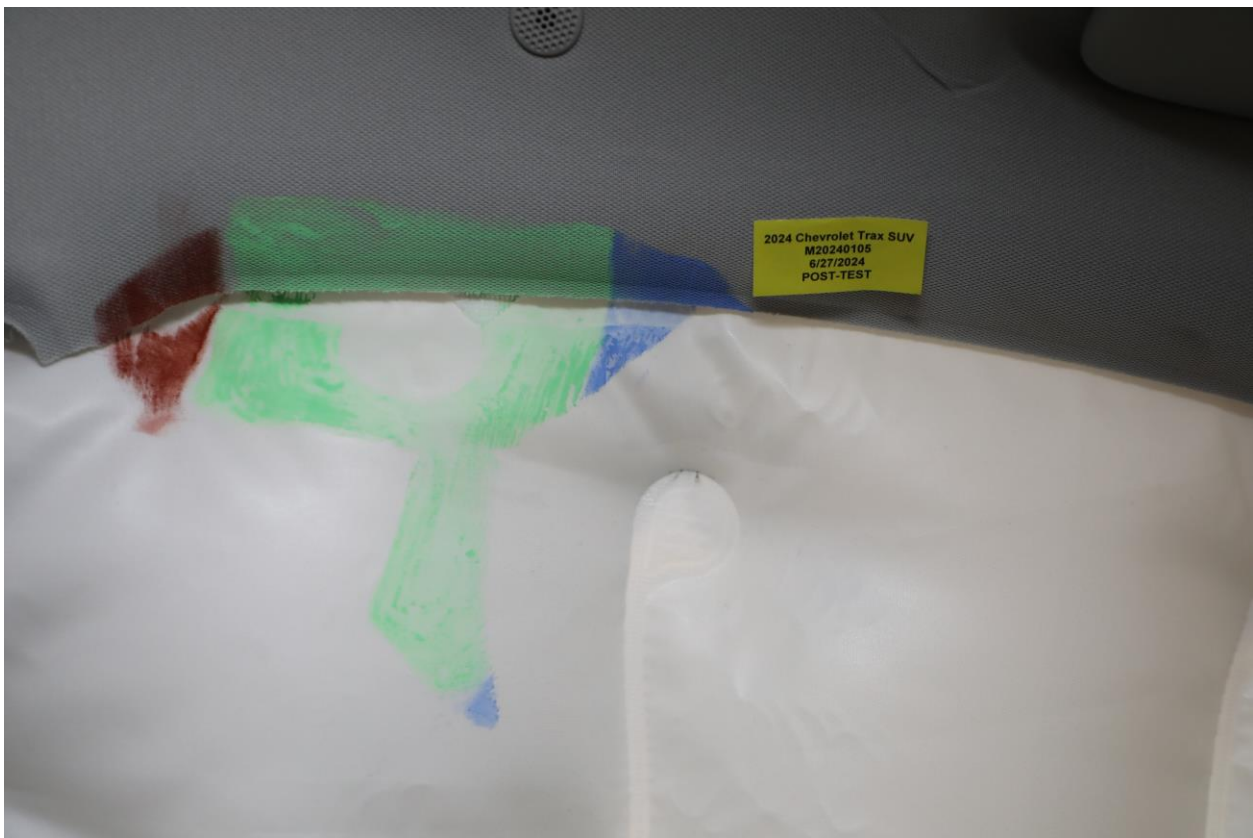
046 Pre-Test Driver Inner Door Panel View



047 Post-Test Driver Inner Door Panel View Showing Driver Dummy Contact Locations



048 Post-Test Driver Dummy Close-Up Head Contact with Vehicle View



049 Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View



050 Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View



051 Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View



052 Post-Test Driver Dummy Close-Up Pelvis Contact View



053 Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View



054 Post-Test Driver Dummy Close-Up Knee Contact View



055 Pre-Test Left Side View of Passenger Dummy Showing Belt and Chalking



056 Pre-Test Left Side View of Passenger Dummy Shoulder and Door Top View



057 Post-Test Left Side View of Passenger Dummy Shoulder and Door Top View



058 Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning



059 Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



060 Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



061 Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



062 Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket



063 Pre-Test View of Rear Passenger Dummy's Head Showing Dummy Head is Level



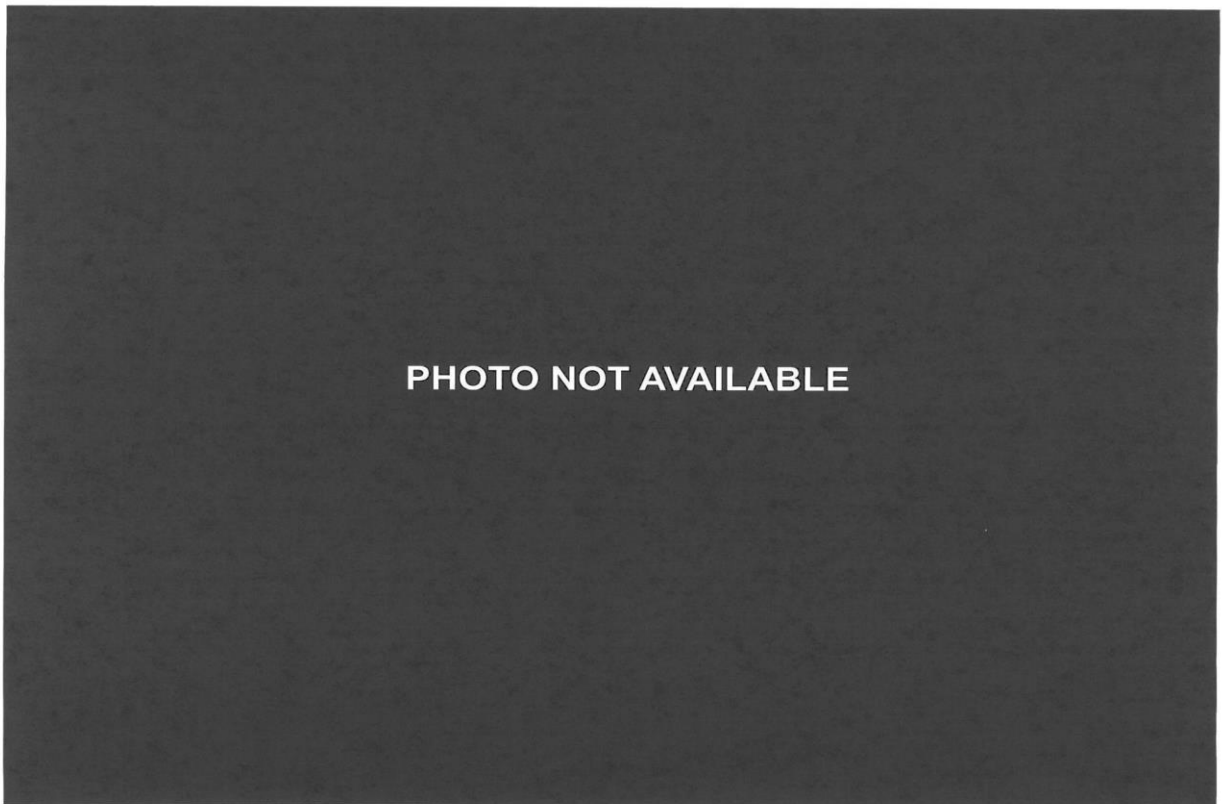
064 Pre-Test Placement of Rear Passenger Dummy's Feet



065 Pre-Test View of Belt Anchorage for Rear Passenger Dummy



066 Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



067 Pre-test Close-Up Left Side View of Rear Passenger Seat Back



068 Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint

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069 Pre-Test Rear Passenger Dummy and Door Clearance View



070 Post-Test Rear Passenger Dummy and Door Clearance View



071 Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



072 Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



073 Pre-Test Rear Passenger Inner Door Panel View



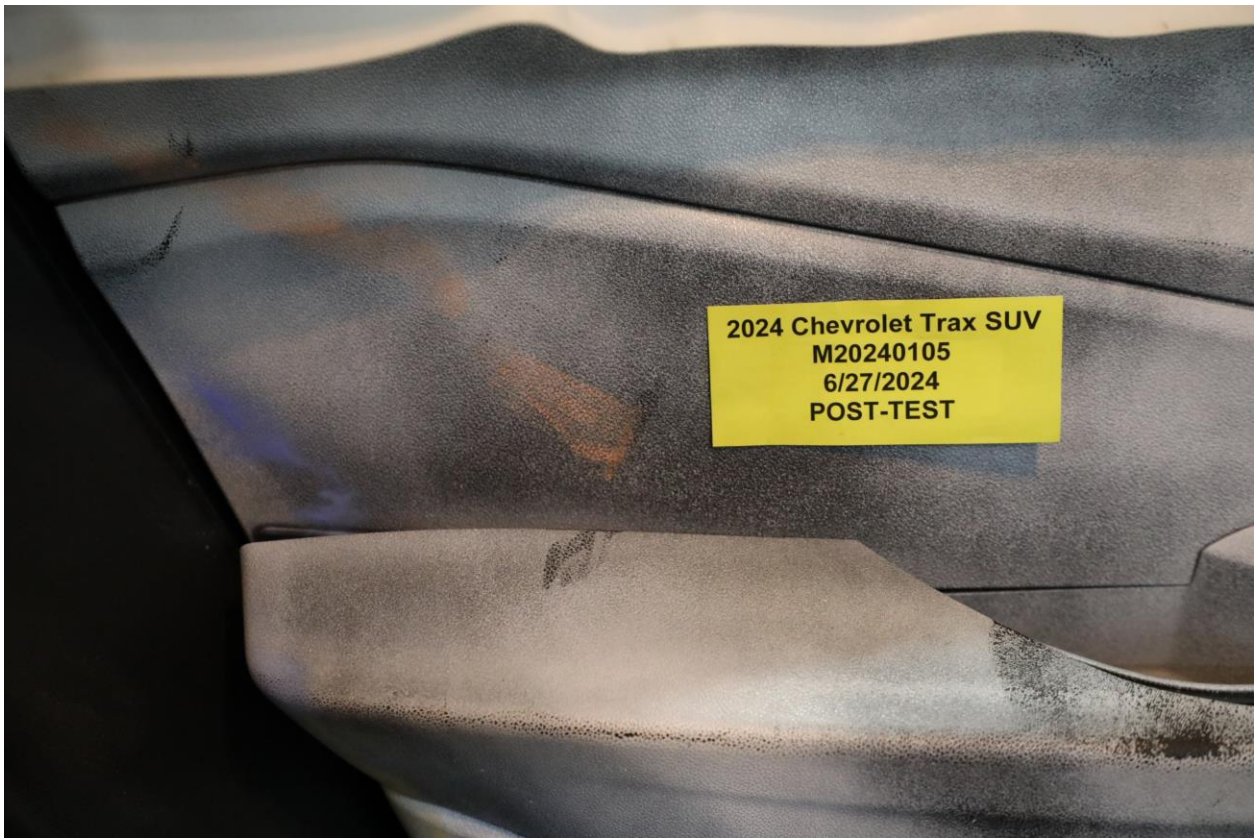
074 Post-Test Rear Passenger Inner Door Panel View

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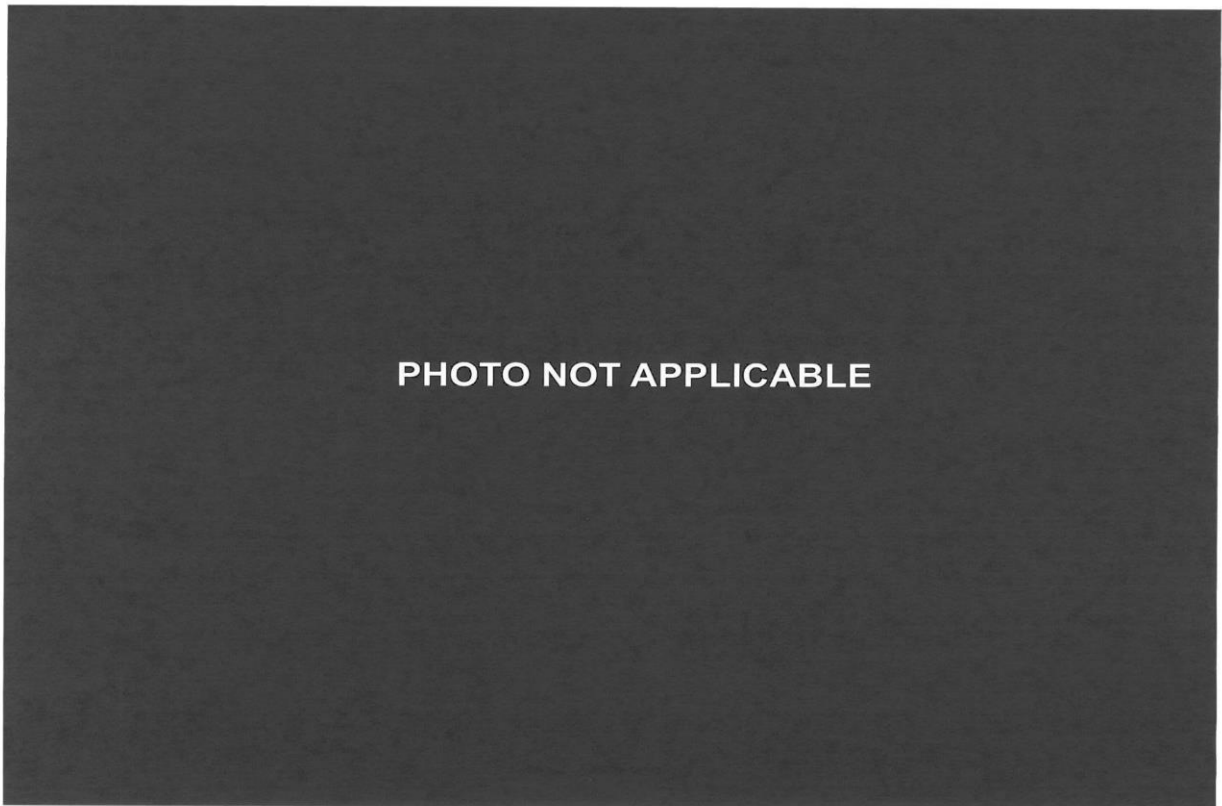
075 Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle View



076 Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View



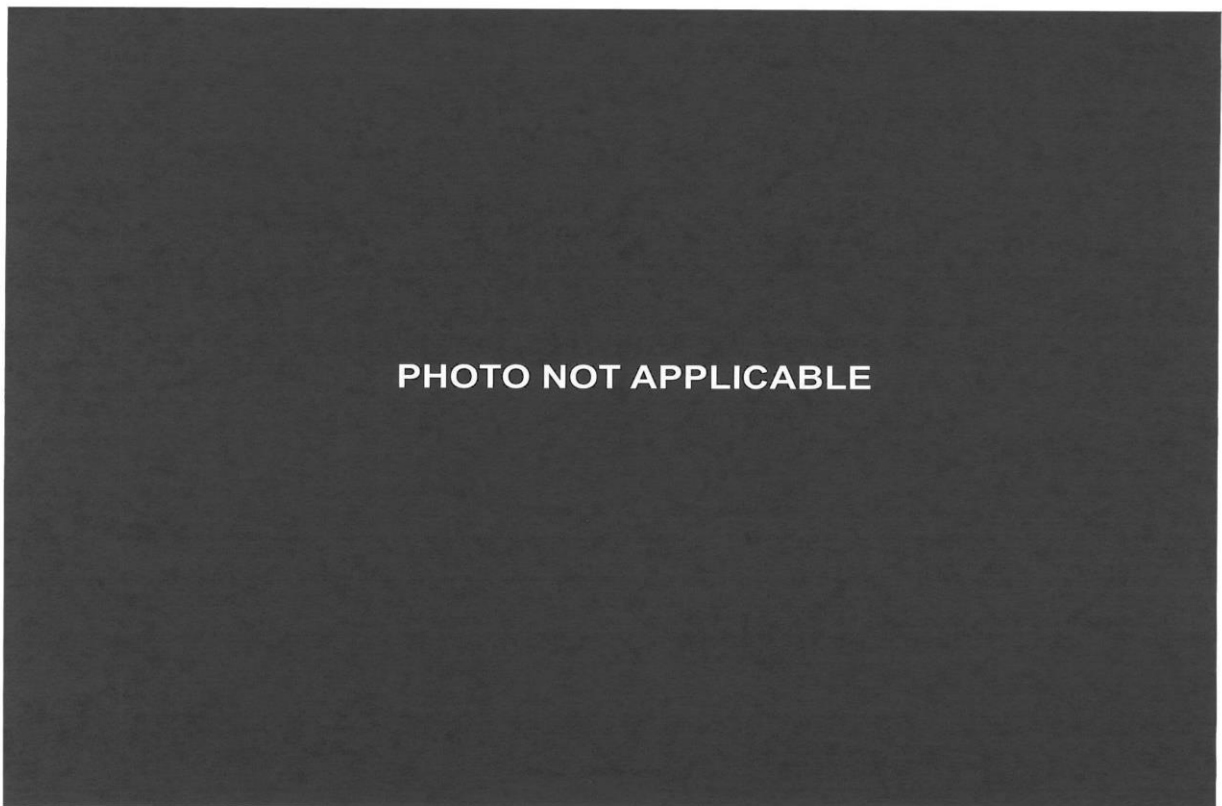
077 Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View



078 Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Airbag View



079 Post-Test Rear Passenger Dummy Close-Up Pelvis Contact View



080 Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Airbag View

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081 Post-Test Rear Passenger Dummy Close-Up Knee Contact View

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082 Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



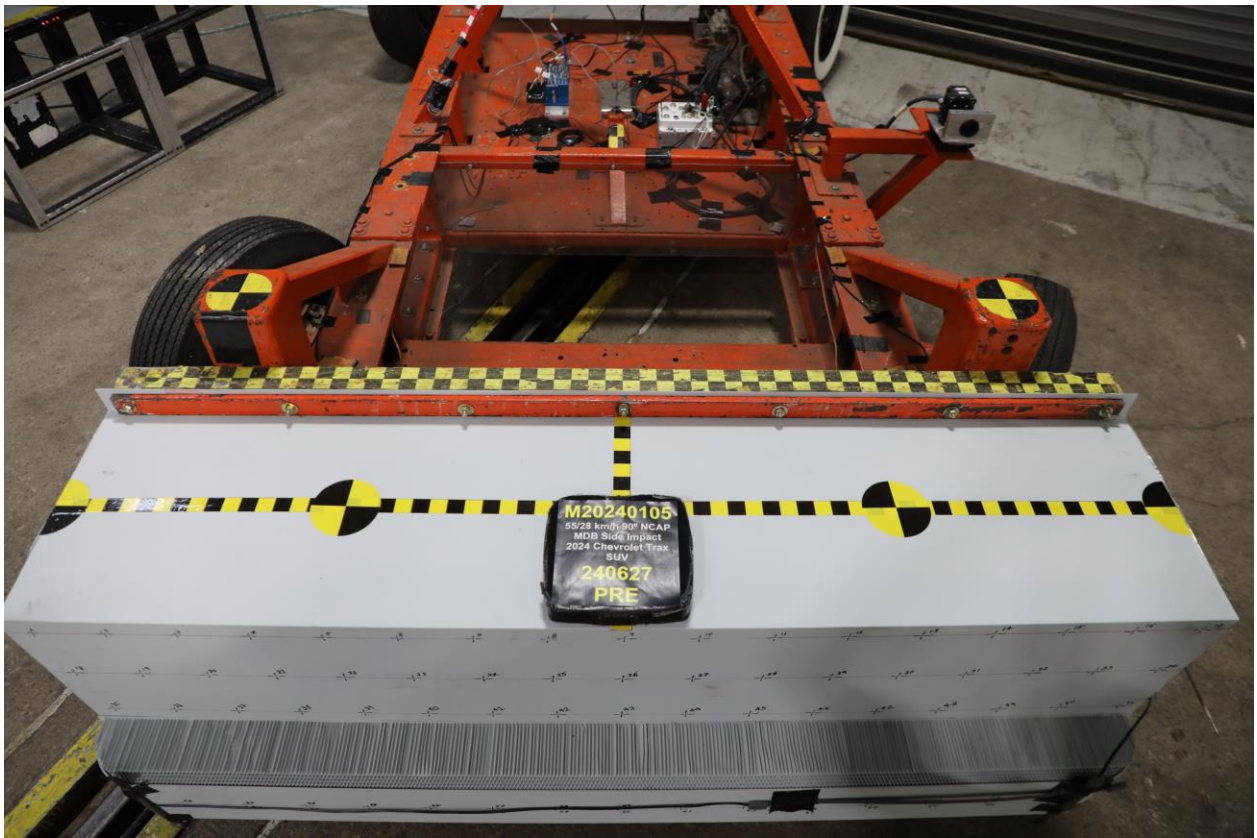
083 Post-Test View of Fuel Filler Cap or Fuel Filler Neck



084 Pre-Test Front View of MDB Impactor Face



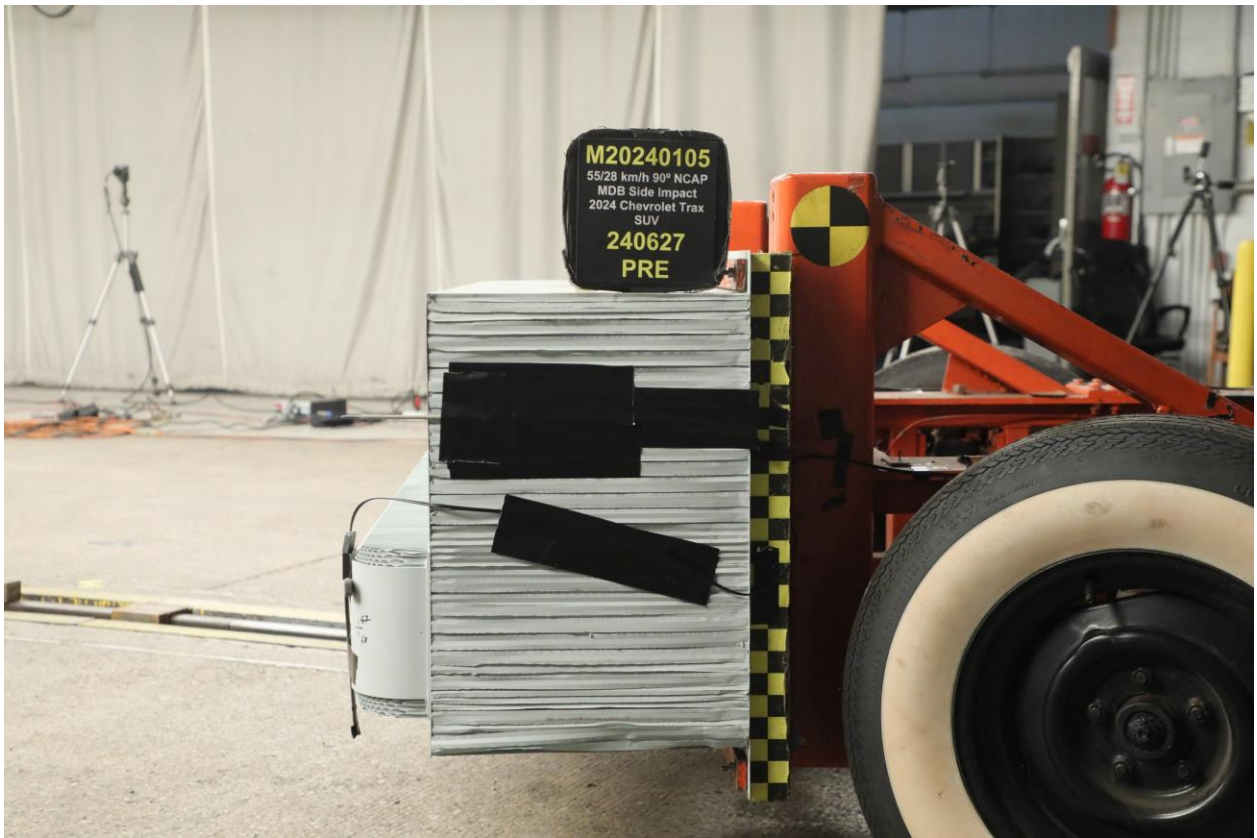
085 Post-Test Front View of MDB Impactor Face



086 Pre-Test Top View of MDB Impactor Face



087 Post-Test Top View of MDB Impactor Face



088 Pre-Test Left Side View of MDB Impactor Face



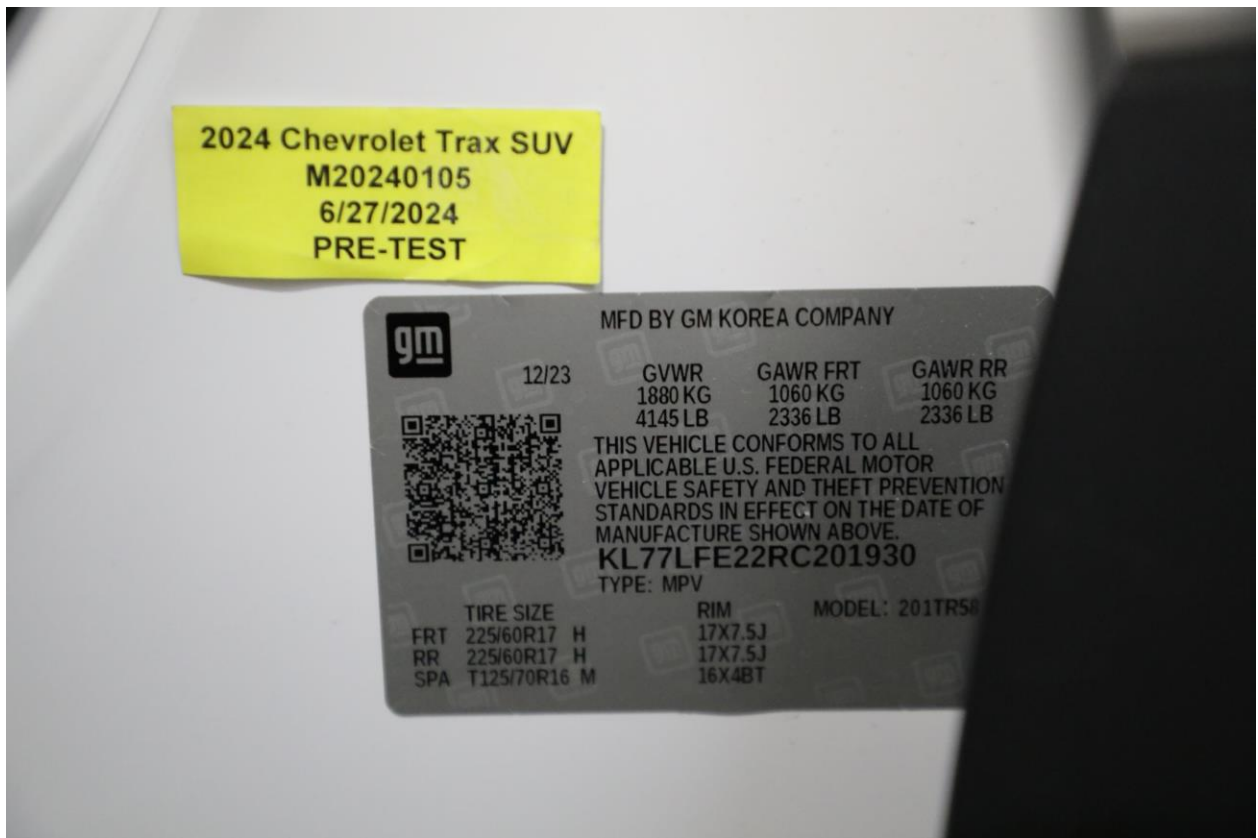
089 Post-Test Left Side View of MDB Impactor Face



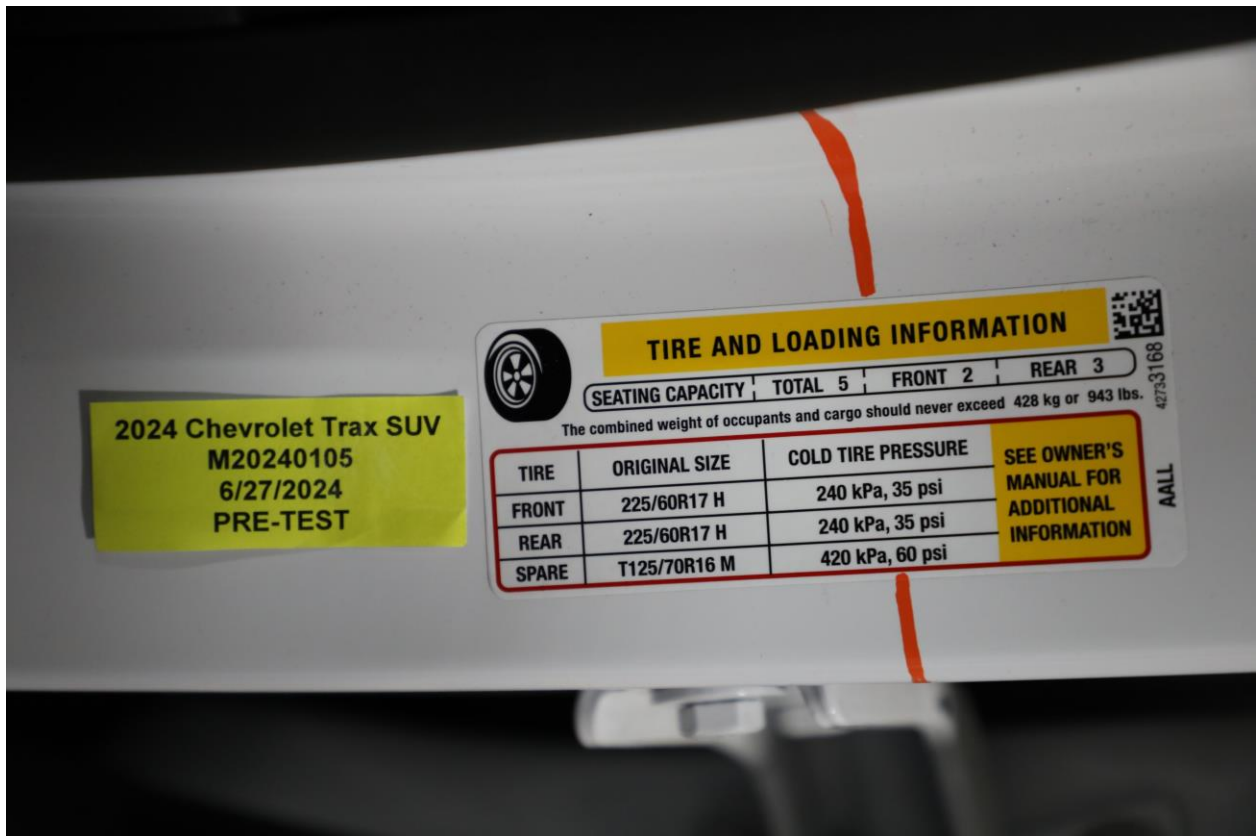
090 Pre-Test Right Side View of MDB Impactor Face



091 Post-Test Right Side View of MDB Impactor Face



092 Close-Up View of Vehicle's Certification Label



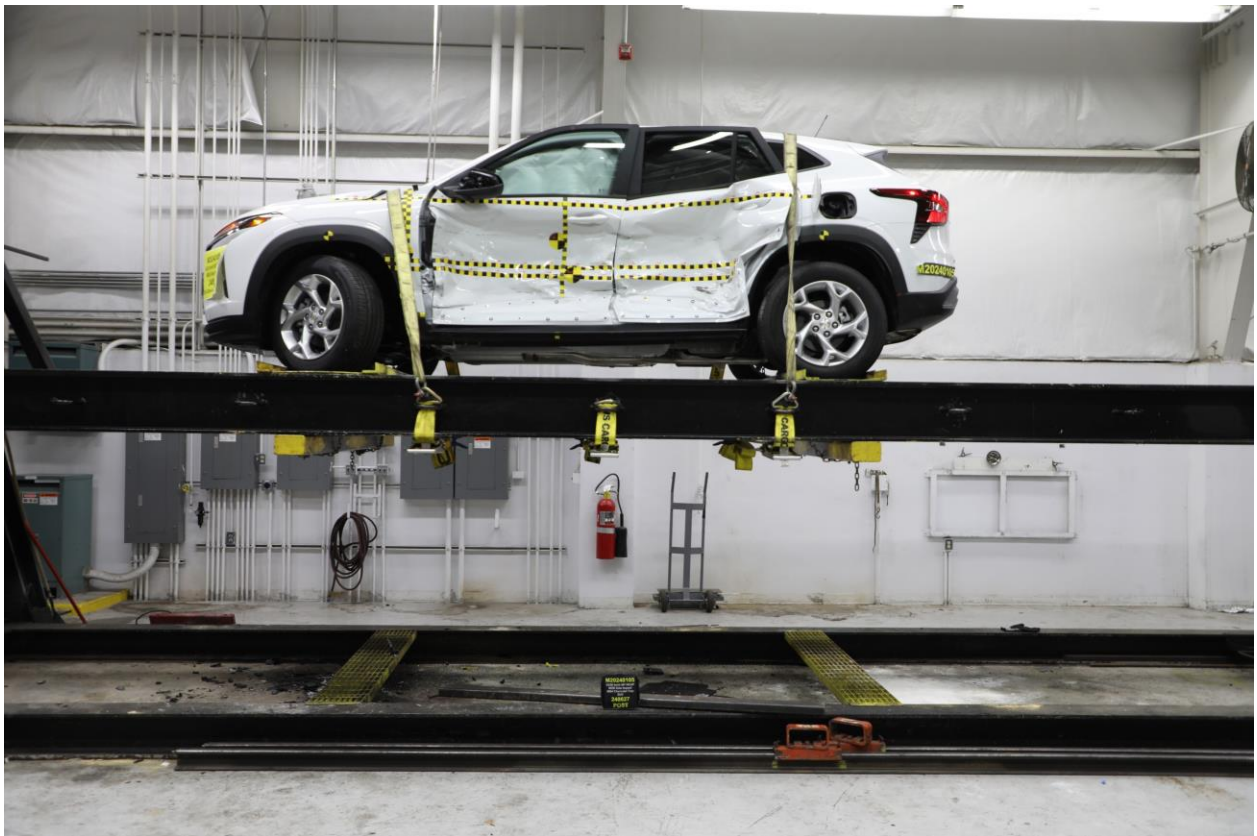
093 Close-Up View of Vehicle's Tire Information Placard or Label



094 Pre-Test Ballast View



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



096 FMVSS No. 301 Static Rollover 0 Degrees



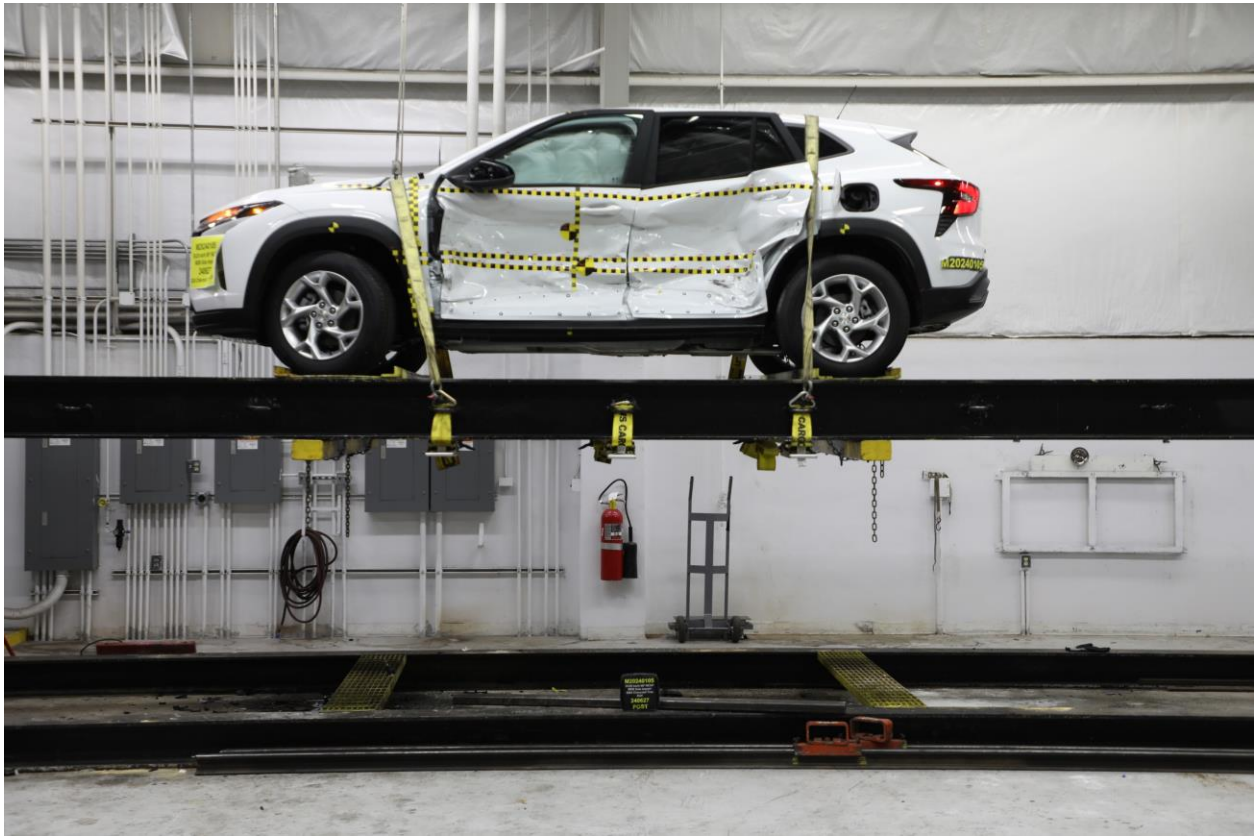
097 FMVSS No. 301 Static Rollover 90 Degrees



098 FMVSS No. 301 Static Rollover 180 Degrees



099 FMVSS No. 301 Static Rollover 270 Degrees



100 FMVSS No. 301 Static Rollover 360 Degrees



101 Impact Event



2024 TRAX 1LS

EXTERIOR: SUMMIT WHITE
INTERIOR: JET BLACK / GRAY WITH
BLUE

ECOTEC 1.2L TURBO
TRANSMISSION, 6-SPD AUTOMATIC

Visit us at www.chevy.com

STANDARD EQUIPMENT
ITEMS FEATURED BELOW ARE INCLUDED AT NO EXTRA CHARGE IN THE STANDARD VEHICLE PRICE SHOWN.
OWNER BENEFITS

- 3 YEAR/50,000 MILE* BUMPER-TO-BUMPER LIMITED WARRANTY
- 5 YEAR/100,000 MILE* POWERTRAIN LIMITED WARRANTY, ROADSIDE ASSISTANCE & COURTESY TRANSPORTATION
- FIRST MAINTENANCE VISIT *WHICHEVER COMES FIRST SEE CHEVROLET.COM OR DEALER FOR TERMS, DETAILS & LIMITS

PERFORMANCE & MECHANICAL

- STABILITRAK STABILITY CONTROL SYSTEM W/ TRACTION CONTROL
- POWER STEERING, ELECTRIC
- COMPACT SPARE TIRE

CONNECTIVITY & TECHNOLOGY

- 8" CHEVROLET INFOTAINMENT 3

SYSTEM DIAGNOL COLOR TOUCHSCREEN

- CRUISE CONTROL
- ACTIVE NOISE CANCELLATION
- 3 YEARS REMOTE ACCESS PLAN; ONSTAR & Wi-Fi DATA CAPABLE SEE ONSTAR.COM FOR TERMS
- HEADLAMP CONTROL, AUTOMATIC ON & OFF
- SPOUSAL AUDIO WITH SIM TRIAL SUBSCRIPTION
- STEERING WHEEL CONTROLS, AUDIO / PHONE

INTERIOR

- GLASS, DEEP-TINTED, REAR WINDOWS AND LIFTGATE
- SEAT ADJUSTER, DRIVER 6-WAY MANUAL
- SEAT, REAR 60/40 SPLIT-FOLDING
- SEAT ADJUSTER, PASSENGER

4-WAY MANUAL

- VISORS, DRIVER/ FRONT PASSENGER W/ VANITY MIRRORS
- ARMREST WITH STORAGE FRONT
- POWER WINDOWS, WITH EXPRESS DOWN ALL

EXTERIOR

- MOLDINGS, BODY-SIDE, LOWER, EXTRA WIDE, MOLDED IN BLACK
- WIPER, REAR INTERMITTENT
- REAR WINDOW DEFROSTER
- DOOR HANDLES, BODY COLOR
- DAYTIME RUNNING LAMPS
- HEADLAMPS, LED
- SPOILER, REAR

SAFETY & SECURITY

- CHEVY SAFETY ASSIST: *FORWARD COLLISION ALERT *AUTOMATIC EMERGENCY BRAKING *FRONT PEDESTRIAN BRAKING *LANE KEEP ASSIST WITH LANE

DEPARTURE WARNING

- FOLLOWING DISTANCE INDICATOR *INTELLIBEAM
- THEFT DETERRANT SYSTEM
- REAR VISION CAMERA
- TIRE PRESSURE MONITOR SYSTEM (EXCL. SPARE TIRE)

MANUFACTURER'S SUGGESTED RETAIL PRICE

STANDARD VEHICLE PRICE	\$20,400.00
-------------------------------	--------------------

OPTIONS & PRICING

OPTIONAL EQUIPMENT INSTALLED BY THE MANUFACTURER (MAY REPLACE STANDARD EQUIPMENT SHOWN)

LS CONVENIENCE PACKAGE	995.00
WHEELS, 17" SILVER-PAINTED ALUMINUM	
REMOTE VEHICLE START	
DRIVER & FRONT PASSENGER HEATED SEATS	
MIRROR CAPS, BODY COLOR	
POWER DUAL OUTSIDE MIRRORS,	

HEATED DRIVER CONFIDENCE PACKAGE: 395.00

- REAR CROSS TRAFFIC ALERT
- LANE CHANGE ALERT WITH SIDE BLIND ZONE ALERT
- REAR PARK ASSIST

TOTAL OPTIONS: \$1,390.00
TOTAL VEHICLE & OPTIONS: \$21,790.00
DESTINATION CHARGE: 1,095.00
TOTAL VEHICLE PRICE* **\$22,885.00**

EPA DOT Fuel Economy and Environment

TRAX FWD

Fuel Economy

30 MPG combined city/hwy

28 city

32 highway

3.3 gallons per 100 miles

You save \$750 in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$1,800

Fuel Economy & Greenhouse Gas Rating (tailpipe only)

Smog Rating (tailpipe only)

This vehicle emits 286 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions, learn more at fuelconomy.gov.

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 26 MPG and costs \$9,750 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$2.60 per gallon. MPG is a miles per gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuelconomy.gov

Calculate personalized estimates and compare vehicles.

Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236

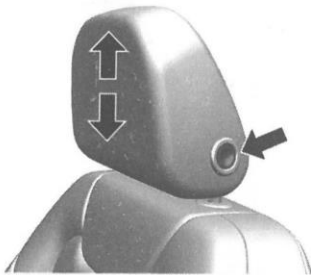
Equipped with the safety and security of OnStar. Visit onstar.com for details.

ORDER NO. 0209101 SALES CODE: E
SALES MODEL CODE: 1T508
DEALER NO. 10507
FINAL ASSEMBLY: CHANGWON, KY KOREA R23120540
VIN KL77LFE22RC201930
DEALER TO WHOM DELIVERED:
MAGUIRE CHEVROLET OF TRUMANSBURG
PO BOX 1050
TRUMANSBURG, NY 14886-1050

GZ

102 Monroney Label

Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chances of a neck injury in a crash.



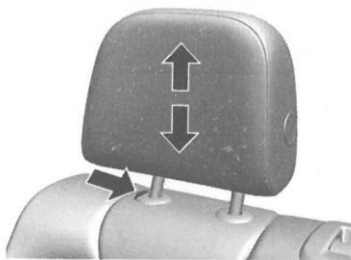
The height of the head restraint can be adjusted.

To raise or lower the head restraint, press the button located on the side of the head restraint, and pull up or push the head restraint down, and release the button. Pull and push on the head restraint after the button is released to make sure that it is locked in place.

The front seat outboard head restraints are not removable.

Rear Seats

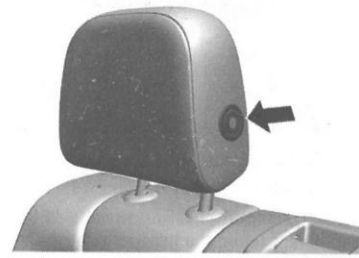
The vehicle's rear seats have adjustable head restraints in the outboard seating positions. The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure it is locked in place.



To lower the head restraint, press the button on the top of the seatback and push the head restraint down. Try to move the head restraint after the button is released to make sure it is locked in place.

Folding the Rear Head Restraint

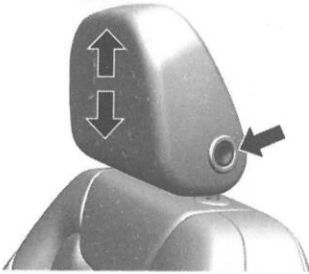
The head restraint can be folded rearward to allow for better visibility when the rear seat is unoccupied.



To fold the head restraint, press the button on the side of the head restraint.

103 Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chances of a neck injury in a crash.



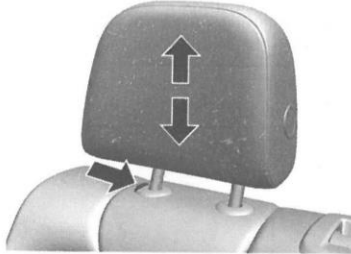
The height of the head restraint can be adjusted.

To raise or lower the head restraint, press the button located on the side of the head restraint, and pull up or push the head restraint down, and release the button. Pull and push on the head restraint after the button is released to make sure that it is locked in place.

The front seat outboard head restraints are not removable.

Rear Seats

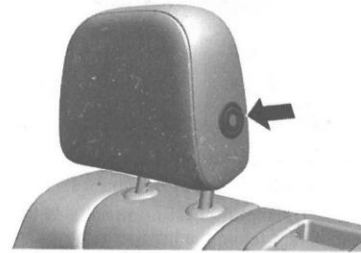
The vehicle's rear seats have adjustable head restraints in the outboard seating positions. The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure it is locked in place.



To lower the head restraint, press the button on the top of the seatback and push the head restraint down. Try to move the head restraint after the button is released to make sure it is locked in place.

Folding the Rear Head Restraint

The head restraint can be folded rearward to allow for better visibility when the rear seat is unoccupied.



To fold the head restraint, press the button on the side of the head restraint.

104 Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Driver & Passenger Dummy Instrumentation Plots

No.	Description	Page
1	Driver Head Acceleration (X) Primary vs. Time	B-5
2	Driver Head Acceleration (Y) Primary vs. Time	B-5
3	Driver Head Acceleration (Z) Primary vs. Time	B-5
4	Driver Head Resultant Acceleration Primary vs. Time	B-5
5	Driver Upper Thorax Rib Deflection (Y) vs. Time	B-6
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-6
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-6
8	Driver Thorax Rib Deflection Maximum vs. Time	B-6
9	Driver Anterior Abdominal Force (Y) vs. Time	B-7
10	Driver Middle Abdominal Force (Y) vs. Time	B-7
11	Driver Posterior Abdominal Force (Y) vs. Time	B-7
12	Driver Total Abdominal Force (Y) vs. Time	B-7
13	Driver Pubic Symphysis Force (Y) vs. Time	B-8
14	Passenger Head Acceleration (X) Primary vs. Time	B-9
15	Passenger Head Acceleration (Y) Primary vs. Time	B-9
16	Passenger Head Acceleration (Z) Primary vs. Time	B-9
17	Passenger Head Resultant Acceleration Primary vs. Time	B-9
18	Passenger Lower Spine T12 Acceleration (X) vs. Time	B-10
19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-10
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-10
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-10
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-11
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-11
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-11

The following additional data can be obtained from the Research and Development section of the NHTSA website (www.nhtsa.gov)

Additional Driver & Passenger Dummy Instrumentation Data

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)
Passenger Head Angular Velocity (X)
Passenger Head Angular Velocity (Y)
Passenger Head Angular Velocity (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 Structure 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

NHTSA

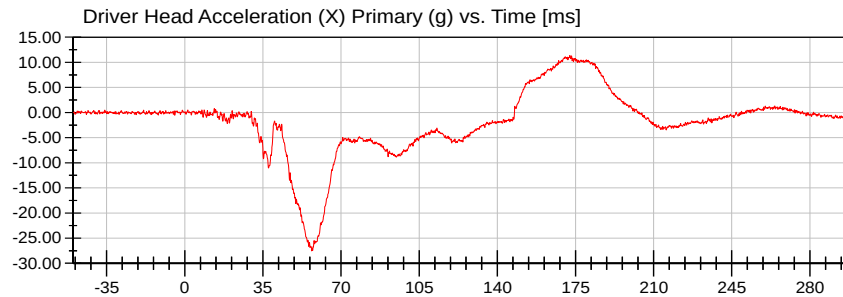
Test Lab: CTF

Test Number: 240627 (M20240105)

Test Date: 06/27/2024

Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)



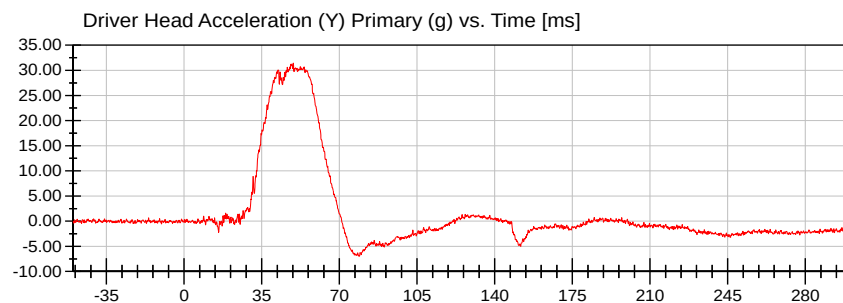
<Max>

11.38 g at 172.48 ms

<Min>

-27.56 g at 56.88 ms

CFC_1000



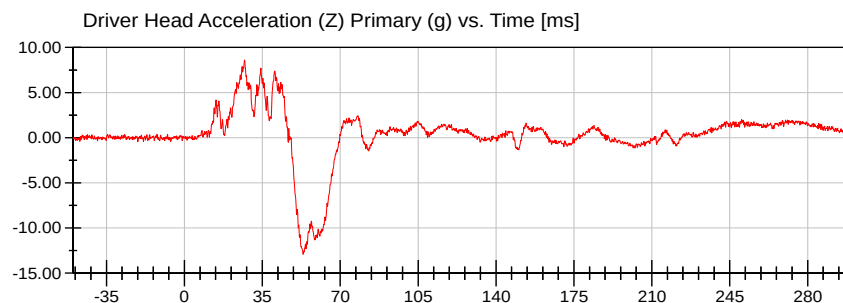
<Max>

31.44 g at 49.20 ms

<Min>

-6.98 g at 79.04 ms

CFC_1000



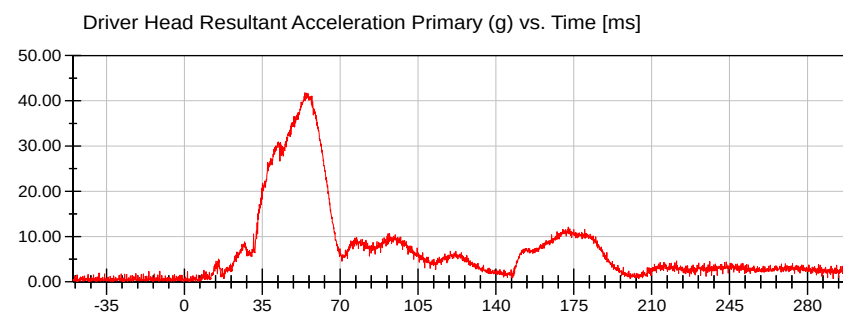
<Max>

8.61 g at 27.04 ms

<Min>

-12.91 g at 53.36 ms

CFC_1000



<Max>

41.80 g at 54.16 ms

<Min>

0.03 g at -47.92 ms

Prefiltered_> CFC 1000



NHTSA

Test Lab: CTF

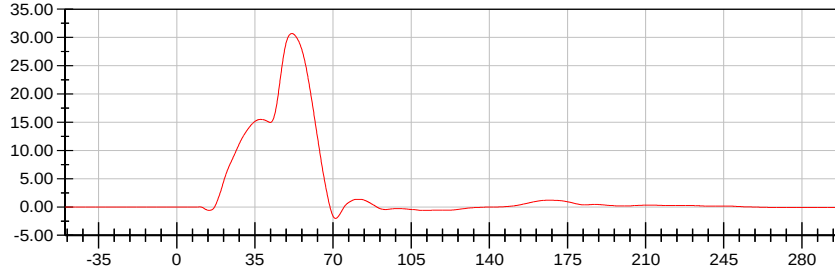
Test Number: 240627 (M20240105)

Test Date: 06/27/2024

Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Driver Upper Thorax Rib Deflection (Y) (mm) vs. Time [ms]



<Max>

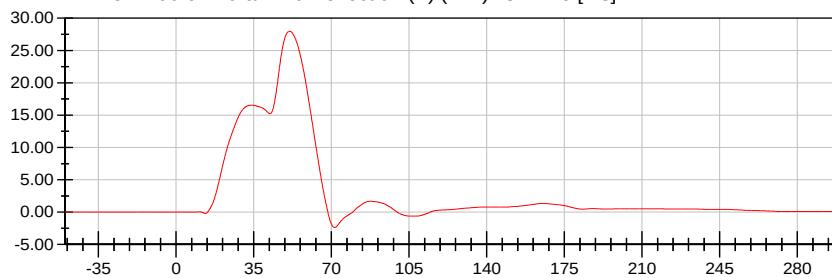
30.70 mm at 51.60 ms

<Min>

-2.02 mm at 71.12 ms

CFC_180

Driver Middle Thorax Rib Deflection (Y) (mm) vs. Time [ms]



<Max>

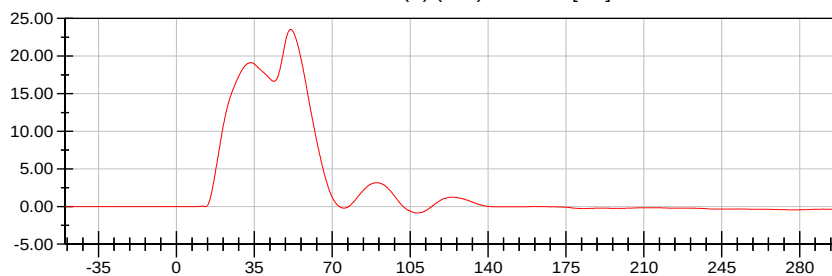
27.96 mm at 51.20 ms

<Min>

-2.38 mm at 71.44 ms

CFC_180

Driver Lower Thorax Rib Deflection (Y) (mm) vs. Time [ms]



<Max>

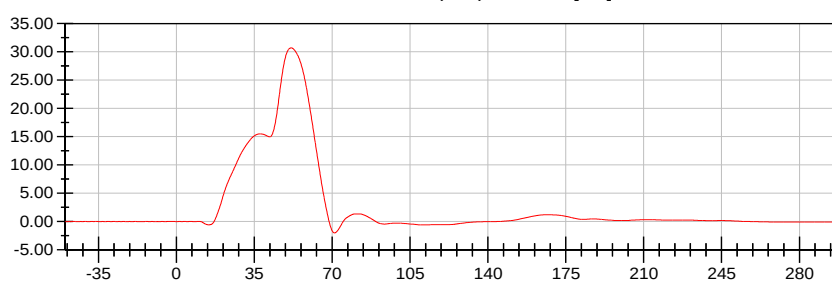
23.54 mm at 51.36 ms

<Min>

-0.85 mm at 108.32 ms

CFC_180

Driver Thorax Rib Deflection Maximum (mm) vs. Time [ms]



<Max>

30.70 mm at 51.60 ms

<Min>

-2.02 mm at 71.12 ms

CFC_180



NHTSA

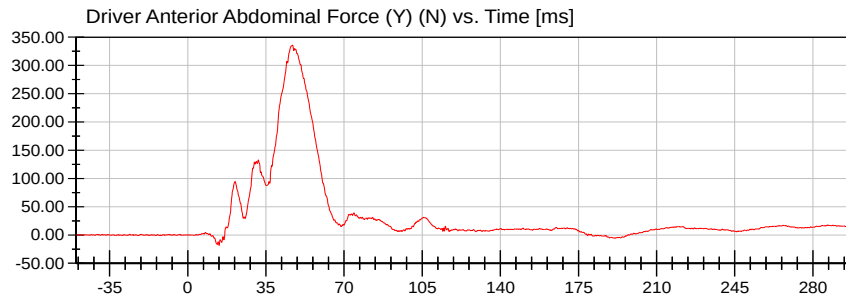
Test Lab: CTF

Test Number: 240627 (M20240105)

Test Date: 06/27/2024

Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)



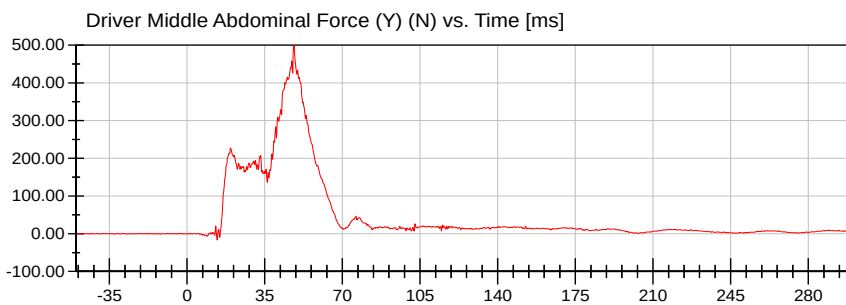
<Max>

336.05 N at 46.96 ms

<Min>

-18.50 N at 14.08 ms

CFC_600



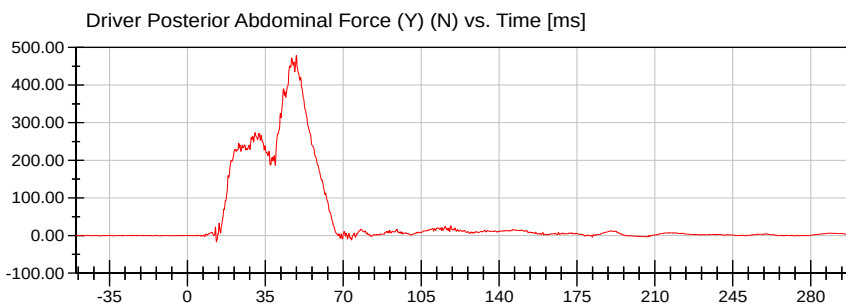
<Max>

499.93 N at 48.16 ms

<Min>

-16.79 N at 13.52 ms

CFC_600



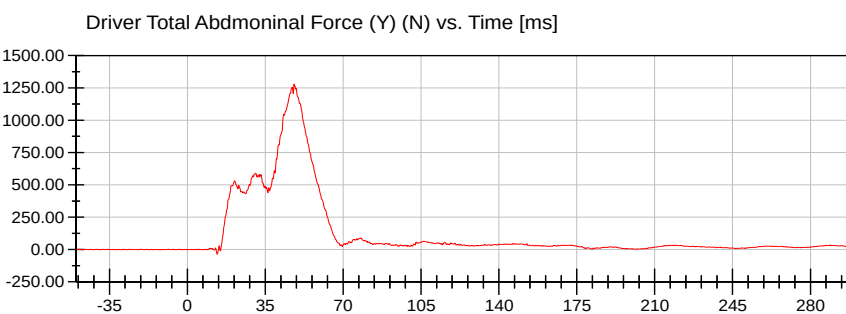
<Max>

478.72 N at 48.96 ms

<Min>

-16.77 N at 13.04 ms

CFC_600



<Max>

1,279.38 N at 48.00 ms

<Min>

-35.98 N at 13.44 ms

CFC_600



NHTSA

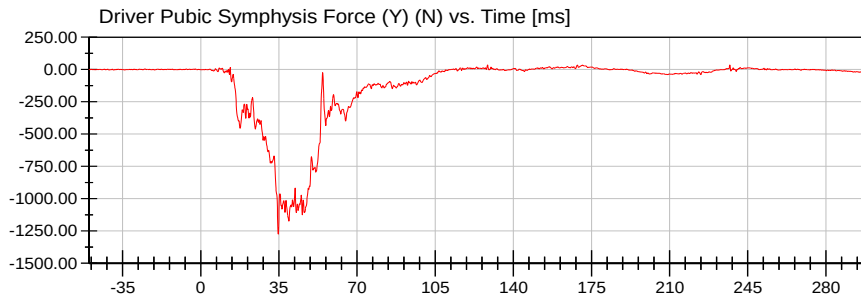
Test Lab: CTF

Test Number: 240627 (M20240105)

Test Date: 06/27/2024

Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)



<Max>

34.63 N at 236.96 ms

<Min>

-1,274.95 N at 34.72 ms

CFC_600



NHTSA

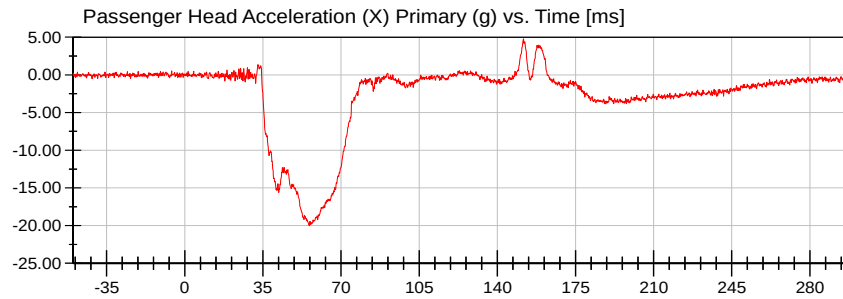
Test Lab: CTF

Test Number: 240627 (M20240105)

Test Date: 06/27/2024

Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)



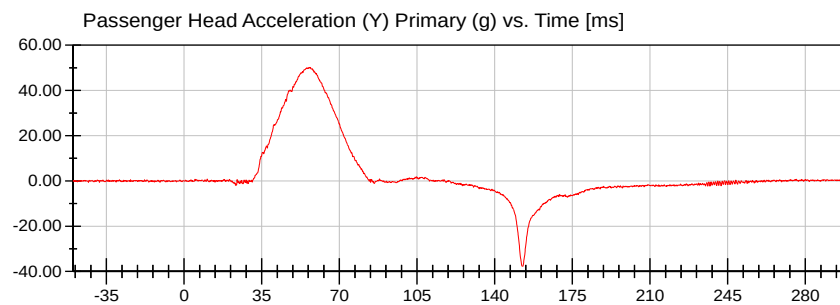
<Max>

4.79 g at 151.68 ms

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-20.02 g at 55.76 ms

CFC_1000



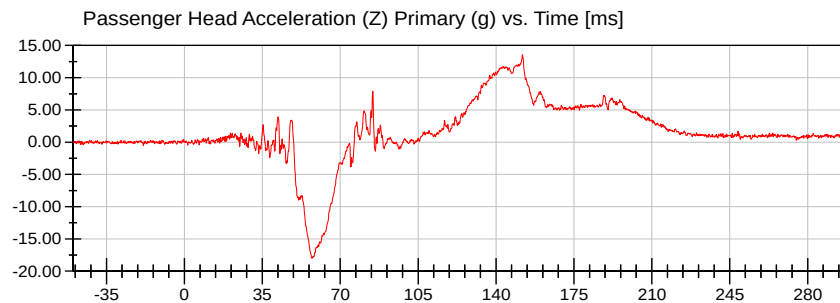
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50.14 g at 56.40 ms

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-37.74 g at 152.64 ms

CFC_1000



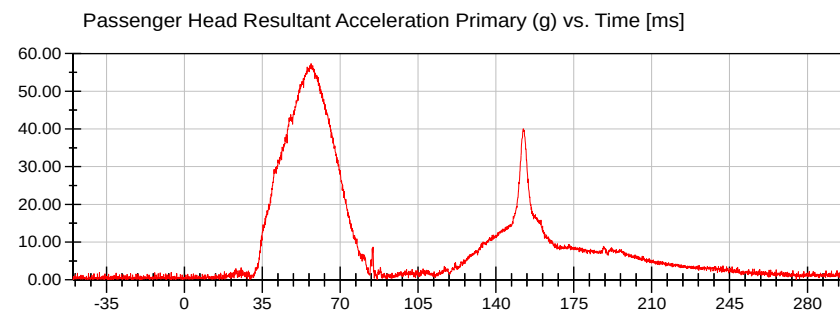
<Max>

13.55 g at 151.92 ms

<Min>

-17.97 g at 57.52 ms

CFC_1000



<Max>

57.34 g at 56.96 ms

<Min>

0.07 g at -43.60 ms

Prefiltered_> CFC 1000



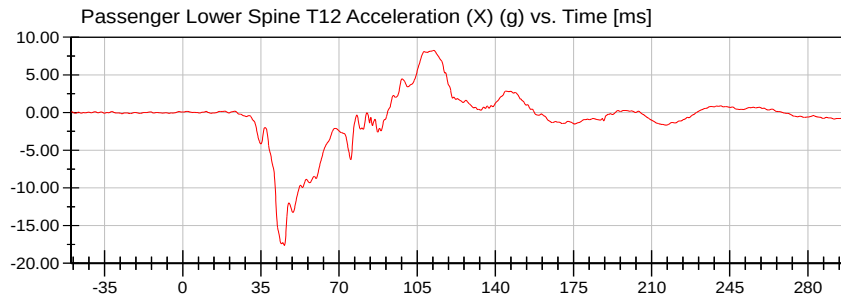
NHTSA

Test Lab: CTF

Test Number: 240627 (M20240105)

Position #1 ES-2 Dummy with Rib Extension (F030)
Position #4 SID IIs Dummy (DQ0570)

Test Date: 06/27/2024



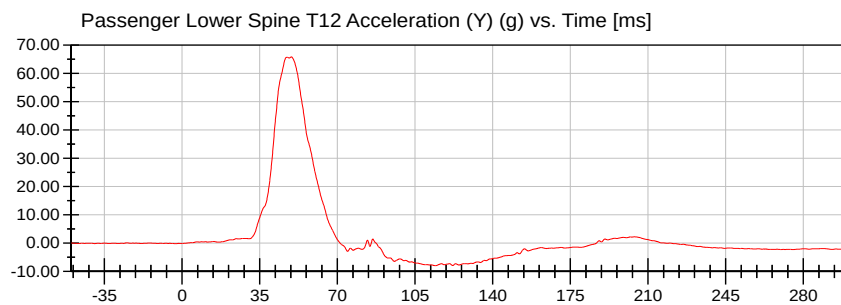
<Max>

8.25 g at 112.40 ms

<Min>

-17.63 g at 45.52 ms

CFC_180



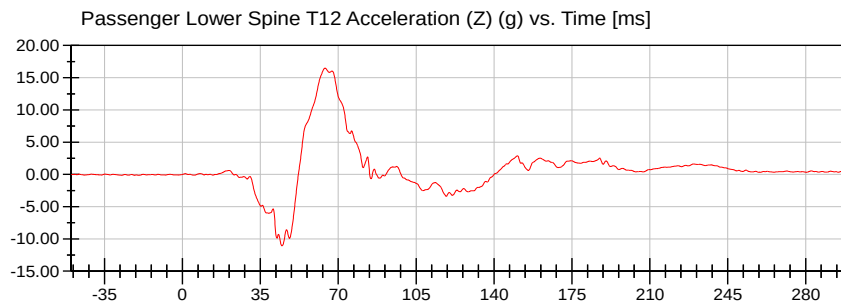
<Max>

65.84 g at 49.20 ms

<Min>

-7.96 g at 114.24 ms

CFC_180



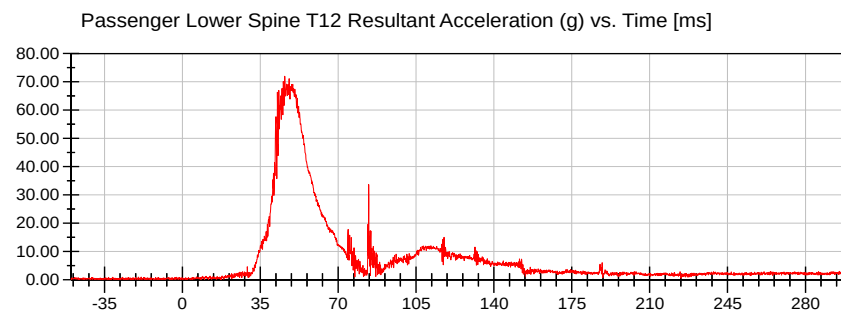
<Max>

16.48 g at 64.08 ms

<Min>

-11.07 g at 44.72 ms

CFC_180



<Max>

71.99 g at 46.00 ms

<Min>

0.05 g at -23.12 ms

Prefiltered_> CFC 1000



NHTSA

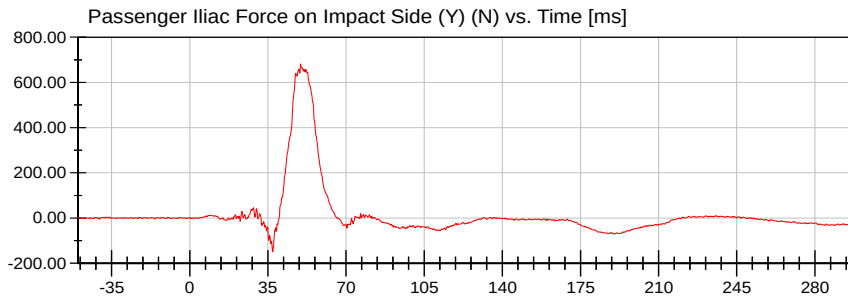
Test Lab: CTF

Test Number: 240627 (M20240105)

Test Date: 06/27/2024

Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)



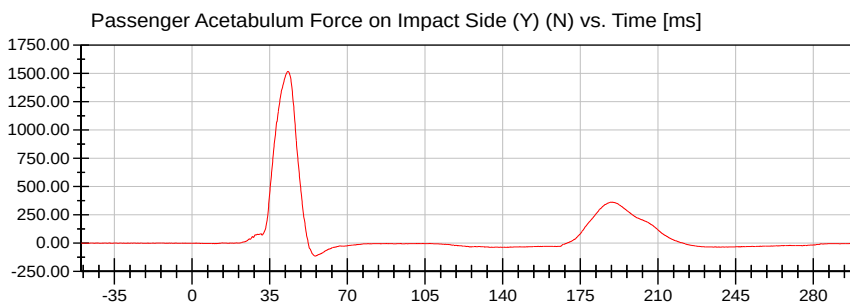
<Max>

681.56 N at 49.68 ms

<Min>

-150.06 N at 37.12 ms

CFC_600



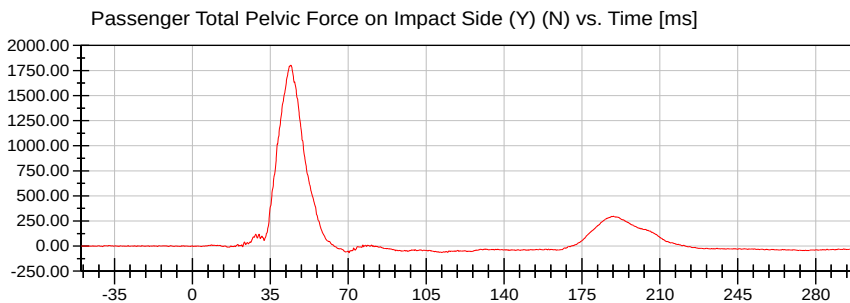
<Max>

1,517.78 N at 43.20 ms

<Min>

-114.84 N at 55.52 ms

CFC_600



<Max>

1,803.60 N at 44.24 ms

<Min>

-66.02 N at 70.40 ms

CFC_600



APPENDIX C
DUMMY PERFORMANCE CALIBRATION TEST DATA

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS

ES-2re (Driver) Dummy

Description

Table 1. External Measurements

Table 2. Head Drop Test

Head (X) Acceleration (G's) vs. Time (ms)
Head (Y) Acceleration (G's) vs. Time (ms)
Head (Z) Acceleration (G's) vs. Time (ms)
Resultant Head Acceleration (G's) vs. Time (ms)

Table 3 Neck Pendulum Test

Pendulum Velocity (m/s) vs. Time (ms)
Flexion Angle (°) vs. Time (ms)
Potentiometer A (°) vs. Time (ms)
Potentiometer B (°) vs. Time (ms)
Potentiometer C (°) vs. Time (ms)

Table 4. Shoulder Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Table 5. Thorax – Upper Rib Drop Test

Upper Rib Displacement @ 459 mm Drop Height (mm) vs. Time (ms)
Upper Rib Displacement @ 815 mm Drop Height (mm) vs. Time (ms)

Table 6. Thorax – Middle Rib Drop Test

Middle Rib Displacement @ 459 mm Drop Height (mm) vs. Time (ms)
Middle Rib Displacement @ 815 mm Drop Height (mm) vs. Time (ms)

Table 7. Thorax – Lower Rib Drop Test

Lower Rib Displacement @ 459 mm Drop Height (mm) vs. Time (ms)
Lower Rib Displacement @ 815 mm Drop Height (mm) vs. Time (ms)

Table 8. Thorax – Full Body Impact Test

Pendulum Acceleration (G's) vs. Time (ms)
Impactor Force (kN) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)

Table 9. Abdomen Impact Test

Impactor Force (kN) vs. Time (ms)
Front Abdomen Force (kN) vs. Time (ms)
Middle Abdomen Force (kN) vs. Time (ms)
Rear Abdomen Force (kN) vs. Time (ms)
Total Abdomen Force (kN) vs. Time (ms)

Table 10. Lumbar Spine Flexion Test

Pendulum Velocity (m/s) vs. Time (ms)
Spine Flexion Angle (°) vs. Time (ms)
Potentiometer A (°) vs. Time (ms)
Potentiometer B (°) vs. Time (ms)
Potentiometer C (°) vs. Time (ms)

Table 11. Pelvis Impact Test

Pendulum Acceleration (G's) vs. Time (ms)
Impactor Force (kN) vs. Time (ms)
Pubic Symphysis (Y) Force (kN) vs. Time (ms)

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS

SID-IIs (Rear Passenger) Dummy

Description

Table 1. External Measurements

Table 2. Head Drop Test

- Head (X) Acceleration (G's) vs. Time (ms)
- Head (Y) Acceleration (G's) vs. Time (ms)
- Head (Z) Acceleration (G's) vs. Time (ms)
- Resultant Head Acceleration (G's) vs. Time (ms)

Table 3. Lateral Neck Pendulum Test

- Pendulum Velocity (m/s) vs. Time (ms)
- Flexion Angle (°) vs. Time (ms)
- Moment About Occipital Condyle (Nm) vs. Time (ms)

Table 4. Shoulder Impact Test

- Impactor Acceleration (G's) vs. Time (ms)
- Shoulder Displacement (mm) vs. Time (ms)
- Upper Spine Acceleration (G's) vs. Time (ms)

Table 5. Thorax (With Arm) Impact Test

- Impactor Acceleration (G's) vs. Time (ms)
- Shoulder Displacement (mm) vs. Time (ms)
- Upper Rib Displacement (mm) vs. Time (ms)
- Middle Rib Displacement (mm) vs. Time (ms)
- Lower Rib Displacement (mm) vs. Time (ms)
- Upper Spine Acceleration (G's) vs. Time (ms)
- Lower Spine Acceleration (G's) vs. Time (ms)

Table 6. Thorax (Without Arm) Impact Test

- Impactor Acceleration (G's) vs. Time (ms)
- Upper Rib Displacement (mm) vs. Time (ms)
- Middle Rib Displacement (mm) vs. Time (ms)
- Lower Rib Displacement (mm) vs. Time (ms)
- Upper Spine Acceleration (G's) vs. Time (ms)
- Lower Spine Acceleration (G's) vs. Time (ms)

Table 7. Abdomen Impact Test

- Impactor Acceleration (G's) vs. Time (ms)
- Upper Abdominal Rib Displacement (mm) vs. Time (ms)
- Lower Abdominal Rib Displacement (mm) vs. Time (ms)
- Lower Spine Acceleration (G's) vs. Time (ms)

Table 8. Pelvis Plug Quasi-Static Test (Optional*)

Table 9. Pelvis Acetabulum Impact Test

- Impactor Acceleration (G's) vs. Time (ms)
- Pelvis (Y) Acceleration (G's) vs. Time (ms)
- Acetabulum Force (N) vs. Time (ms)

Table 10. Pelvis Iliac Impact Test

- Impactor Acceleration (G's) vs. Time (ms)
- Pelvis (Y) Acceleration (G's) vs. Time (ms)
- Iliac Force (N) vs. Time (ms)

Pre-Test Calibration Sheets
Driver S/N F030

Transportation Research Center Inc.
572U ES-2re Dummy
External Dimensions
Serial No. F030 Calibration No. 93

Symbol	Description	Specification	Results	Pass
		mm	mm	
1	Sitting Height	900.0 - 918.0	909	Yes
2	Seat to Shoulder Joint	558.0 - 572.0	560	Yes
3	Seat to Lower Face of Thoracic Spine Box	346.0 - 356.0	347	Yes
4	Seat to Hip Joint (center of bolt)	97.0 - 103.0	98	Yes
5	Sole to Seat, Sitting	433.0 - 451.0	443	Yes
6	Head Width	152.0 - 158.0	154	Yes
7	Shoulder/Arm Width	461.0 - 479.0	475	Yes
8	Thorax Width	322.0 - 332.0	328	Yes
9	Abdomen Width	273.0 - 287.0	279	Yes
10	Pelvis Lap Width	359.0 - 373.0	366	Yes
11	Head Depth	196.0 - 206.0	201	Yes
12	Thorax Depth	262.0 - 272.0	262	Yes
13	Abdomen Depth	194.0 - 204.0	199	Yes
14	Pelvis Depth	235.0 - 245.0	242	Yes
15	Back of Buttocks to Hip Joint (center of bolt)	150.0 - 160.0	156	Yes
16	Back of Buttocks to Front of Knee	597.0 - 615.0	605	Yes

Baseline 10/07/05



Transportation Research Center Inc.

Left Lateral Head Drop

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	69 %	Yes
Peak Resultant Acceleration	125 - 155 g	131.5 g	Yes
Peak Longitudinal Acceleration	(-15) - 15 g	8.0 g	Yes
Is Resultant Acceleration Curve Unimodal within 15% of Main Pulse?	< 15 %	3.94 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: DP6812

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.14.2024 14:11:26 361

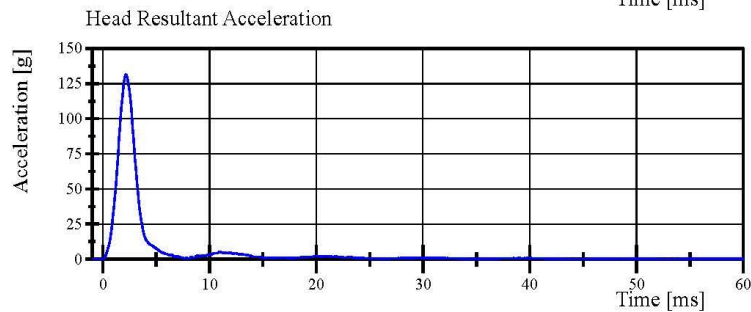
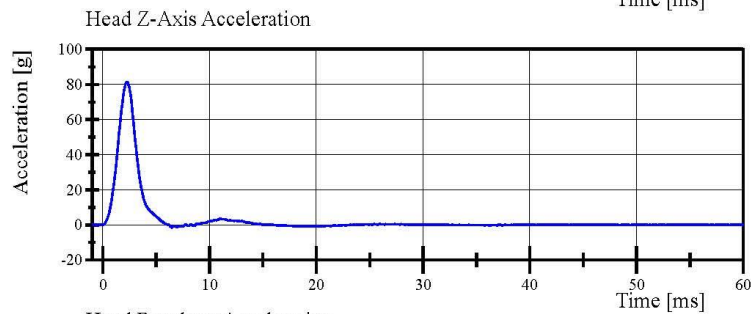
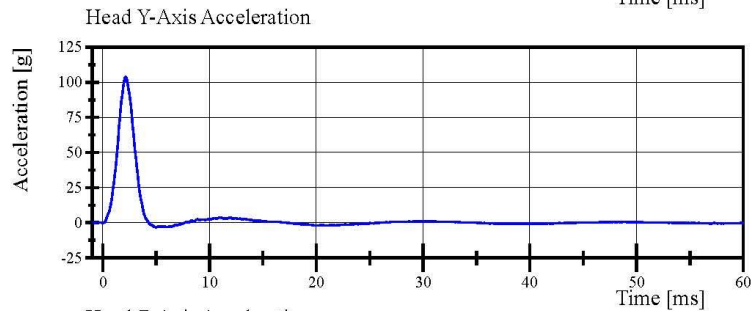
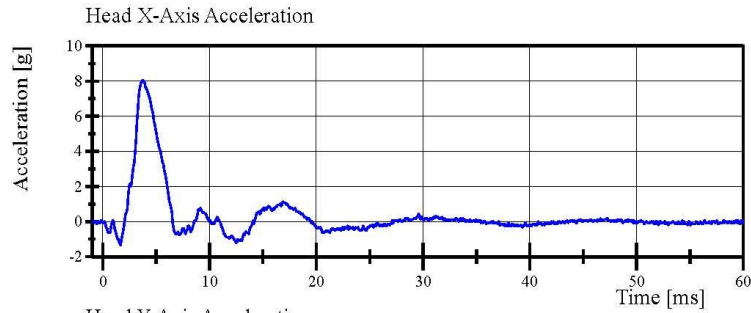


Transportation Research Center Inc.

Left Lateral Head Drop

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/14/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.14.2024 14:12:05 361



Transportation Research Center Inc.

Left Lateral Neck

ES-2re Serial No. F030 Certification No. 93-2

Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	65 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.38 m/s	Yes
Maximum Headform Flexion			
Peak	(-49) - (-59) deg	-51.7 deg	Yes
Time of Peak	54 - 66 ms	56.1 ms	Yes
Headform Flexion Decay			
- Peak to Zero	53 - 88 ms	56.6 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 05053

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.14.2024 15:14:39 1495

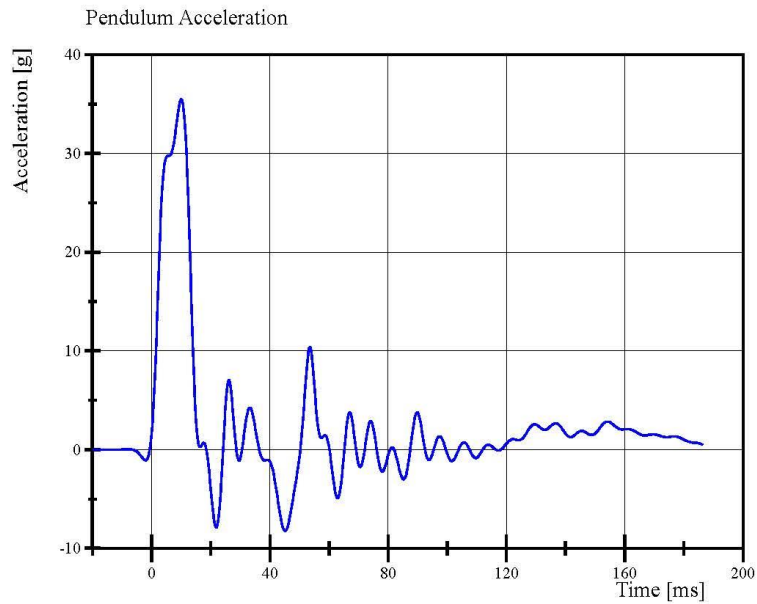


Transportation Research Center Inc.

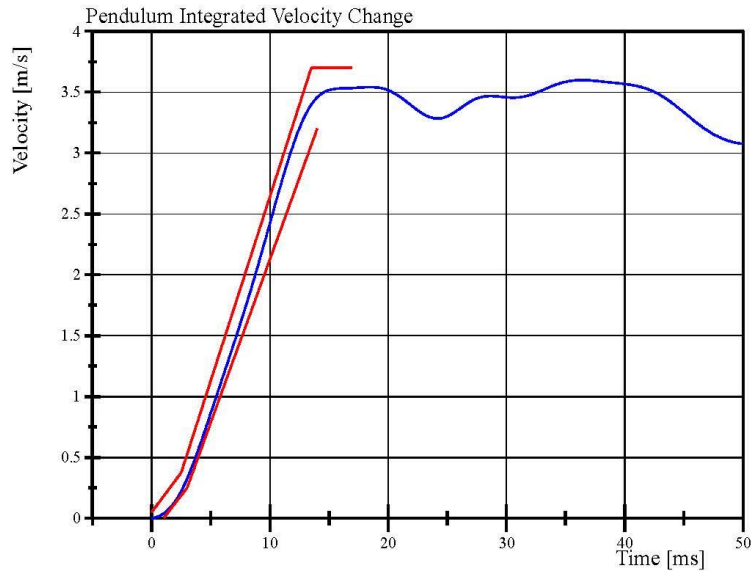
Left Lateral Neck

ES-2re Serial No. F030 Certification No. 93-2

Test Date: 6/14/2024



Filter Class: CFC_60
Max: 35.5 g at 10.0 ms
Min: -8.2 g at 45.1 ms



Filter Class: CFC_60
Max: 3.6 m/s at 36.4 ms
Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.14.2024 15:15:51 1495

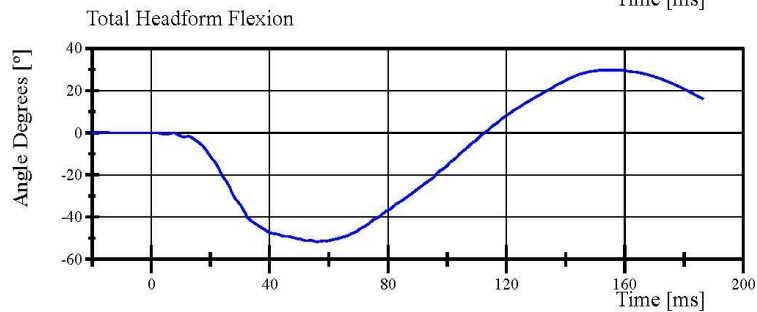
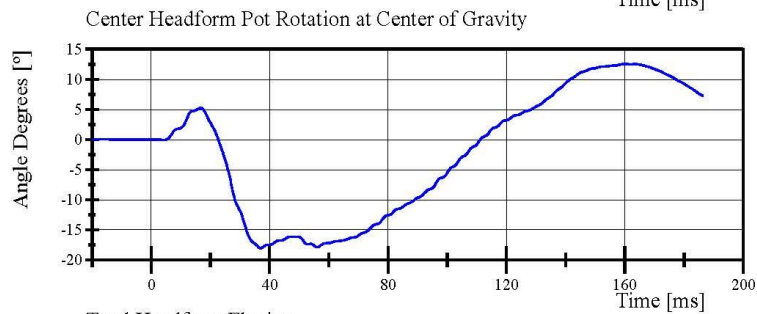
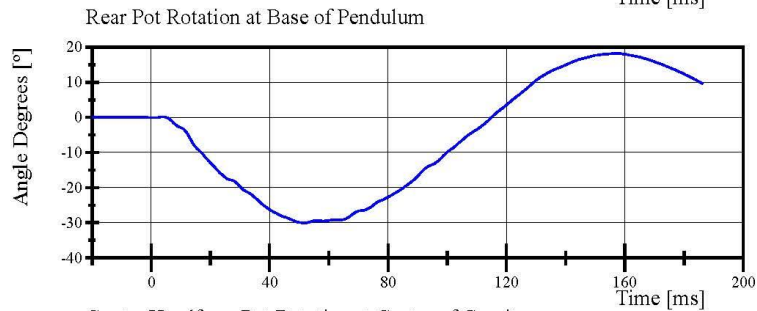
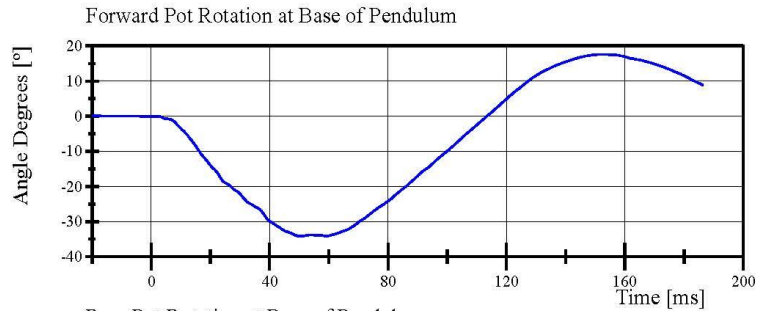


Transportation Research Center Inc.

Left Lateral Neck

ES-2re Serial No. F030 Certification No. 93-2

Test Date: 6/14/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.14.2024 15:15:51 1495



Transportation Research Center Inc.

Left Lateral Shoulder

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	66 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.21 m/s	Yes
Test Probe Acceleration	(-7.5) - (-10.5) g	-9.97 g	Yes

Test meets specifications.

Condition: Used

Comments:

Arm S/N: 175-3501-07014

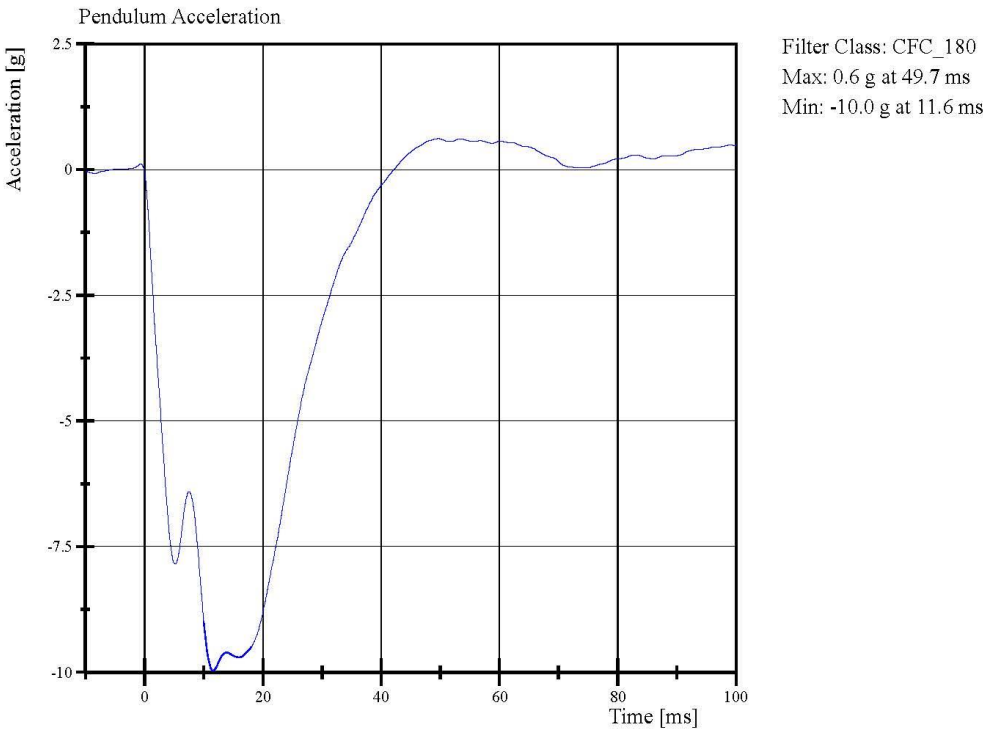
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with Polarity in accordance with J211

06.18.2024 10:56:54 546



Transportation Research Center Inc.

Left Lateral Shoulder
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 10:57:34 546



Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	65 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	39.0 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 462 mm

Rib Foam S/N: EK6973

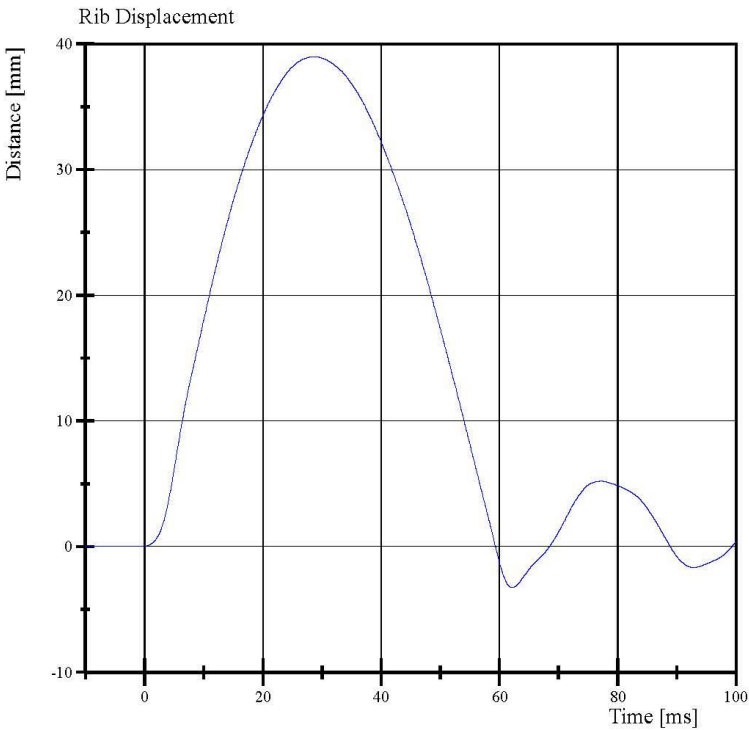
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:39:21 636



Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 39.0 mm at 28.6 ms
Min: -3.3 mm at 62.2 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:40:10 636



Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	65 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	49.0 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 816 mm

Rib Foam S/N: EK6973

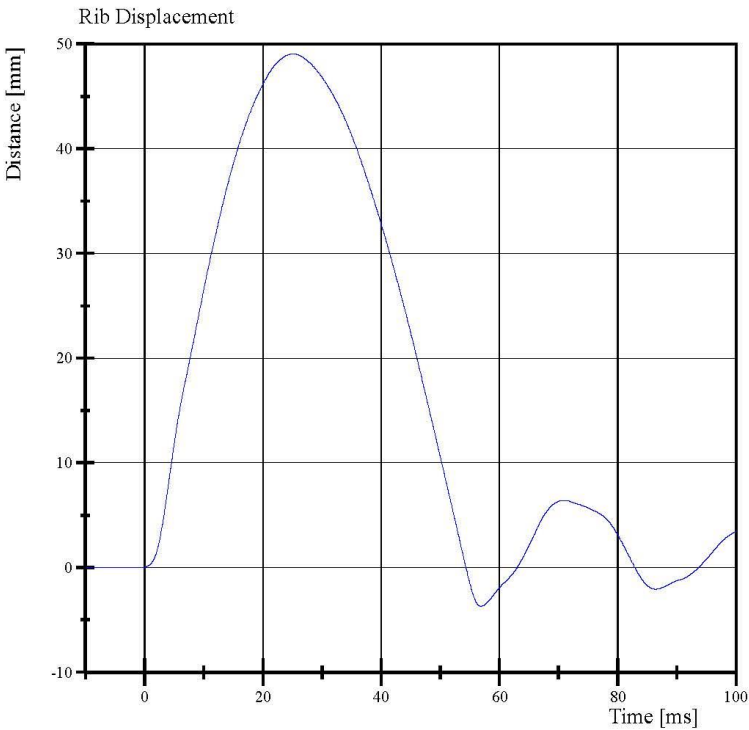
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:33:22 525



Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 49.0 mm at 25.1 ms
Min: -3.7 mm at 56.9 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:34:43 525



Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	69 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.7 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 462 mm

Rib Foam S/N: EK6970

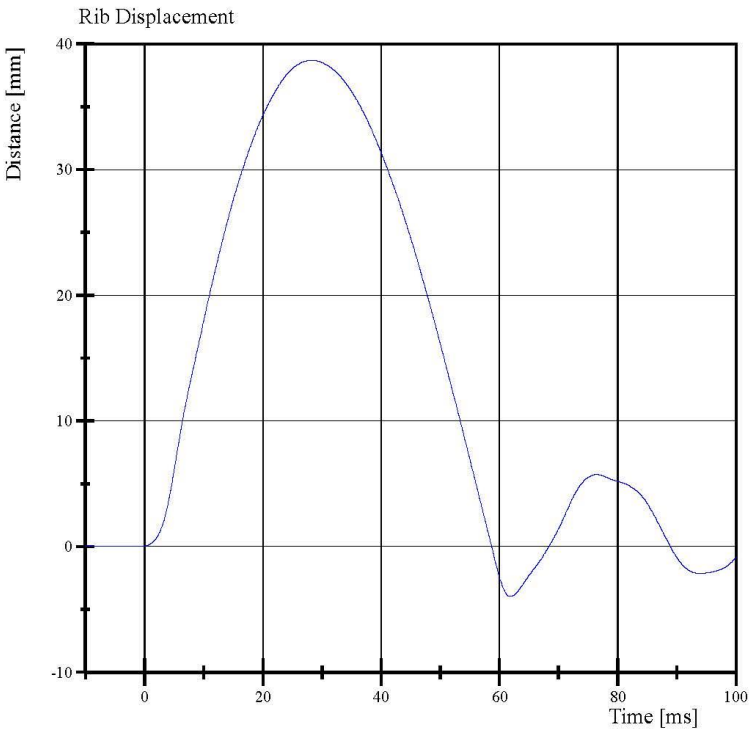
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:53:15 609



Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 38.7 mm at 28.3 ms
Min: -4.0 mm at 61.8 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:54:00 609



Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	49.9 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 816 mm

Rib Foam S/N: EK6970

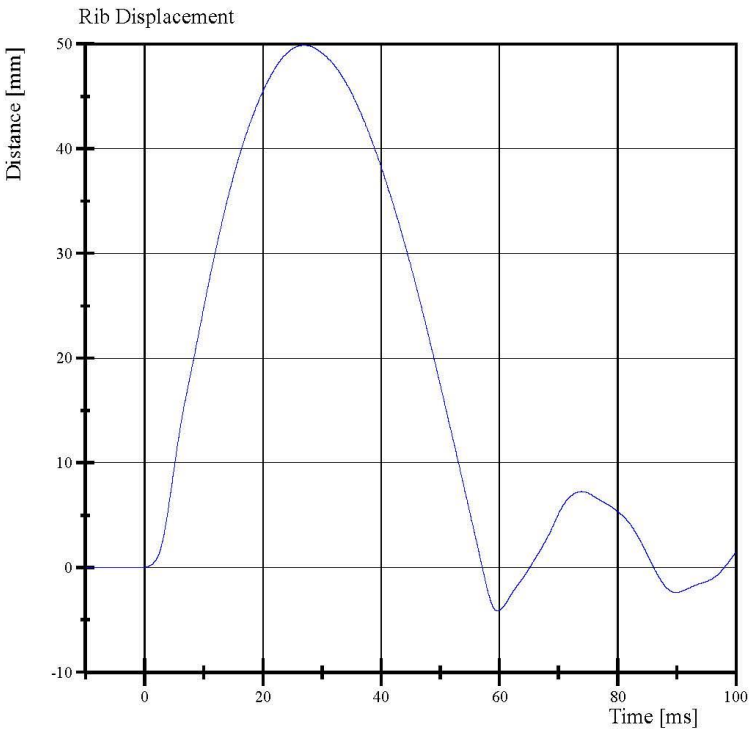
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:47:31 505



Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 49.9 mm at 27.0 ms
Min: -4.1 mm at 59.7 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 08:48:22 505



Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.0 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 462 mm

Rib Foam S/N: EK6971

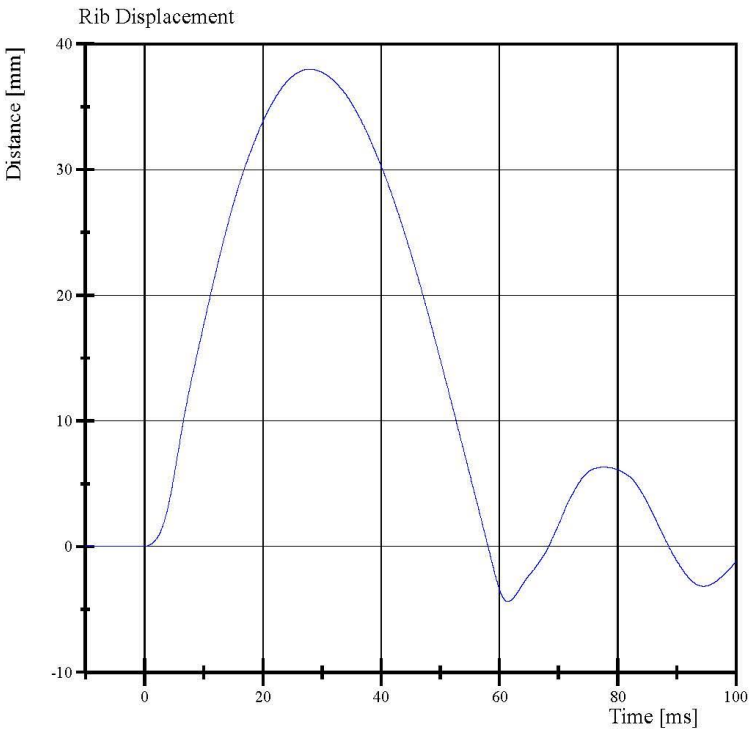
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 09:32:23 625



Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 38.0 mm at 28.0 ms
Min: -4.4 mm at 61.4 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 09:33:15 625



Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	47.1 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 816 mm

Rib Foam S/N: EK6971

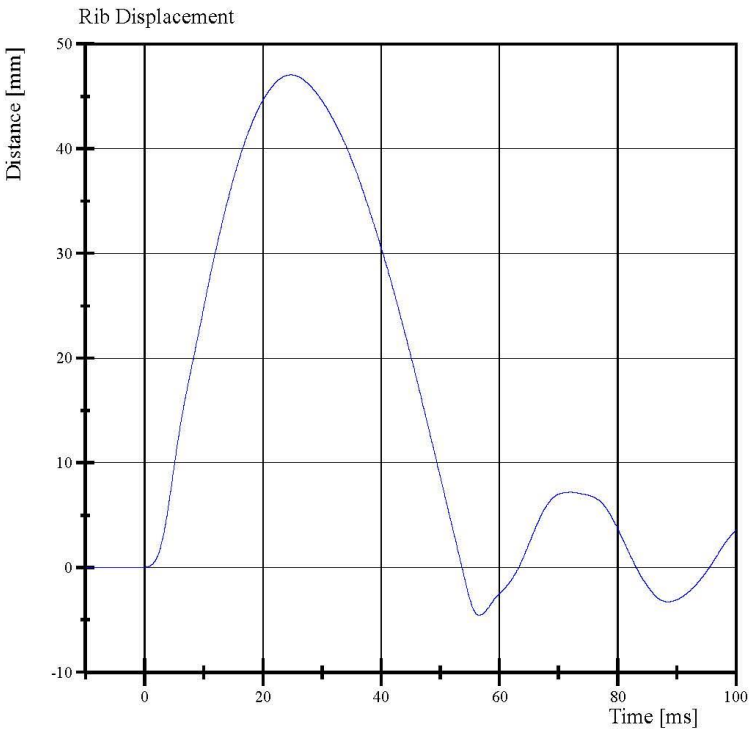
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 09:03:38 503



Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 47.1 mm at 24.7 ms
Min: -4.6 mm at 56.6 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 09:04:25 503



Transportation Research Center Inc.

Left Lateral Thorax
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Impactor Velocity	5.4 - 5.60 m/s	5.442 m/s	Yes
Peak Impactor Force after 6 ms	(-5,100) - (-6,200) N	-5,776.1 N	Yes
Upper Rib Displacement	34 - 41 mm	39.1 mm	Yes
Center Rib Displacement	37 - 45 mm	40.7 mm	Yes
Lower Rib Displacement	37 - 44 mm	39.6 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Upper Rib Module S/N: 175-4008-A

Upper Rib Foam S/N: 175-4003-EK6973

Middle Rib Module S/N: 175-4008-A

Middle Rib Foam S/N: 175-4003-EK6970

Lower Rib Module S/N: 175-4008-A-06-017

Lower Rib Foam S/N: 175-4008-EK6971

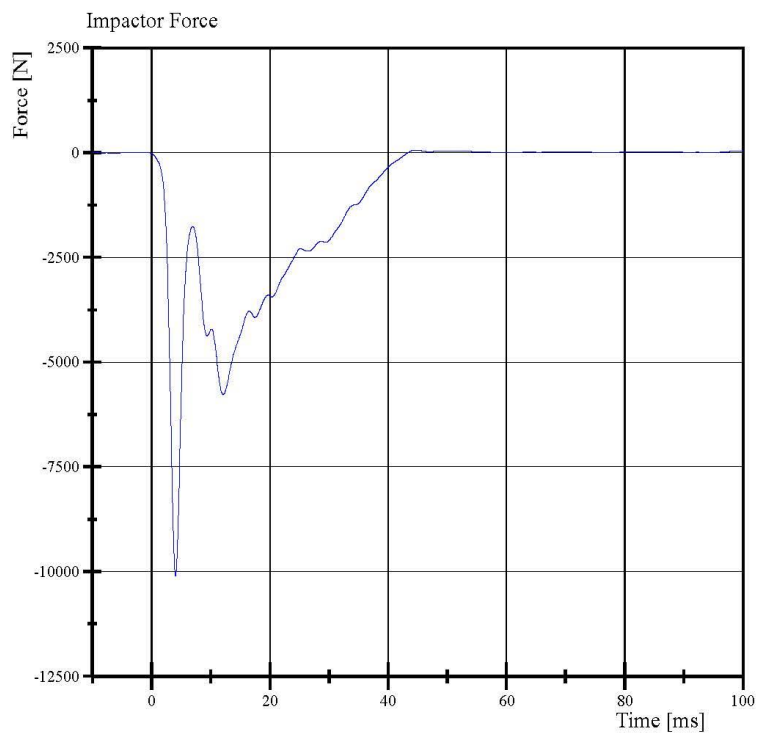
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 11:18:16 435



Transportation Research Center Inc.

Left Lateral Thorax
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Filter Class: CFC_180
Max: 63.5 N at 44.6 ms
Min: -10,108.0 N at 4.1 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 11:19:21 435

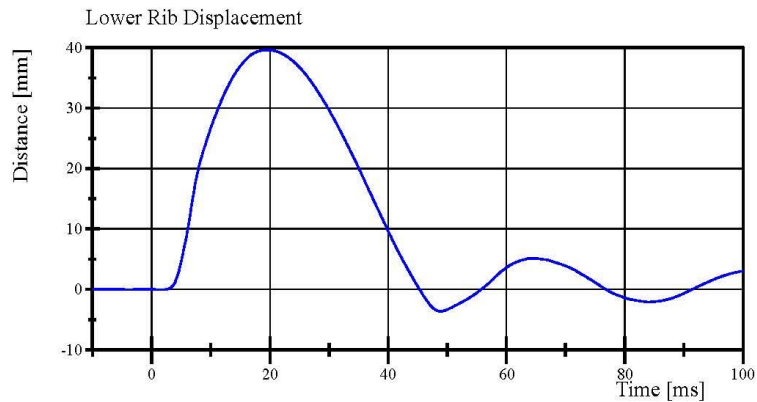
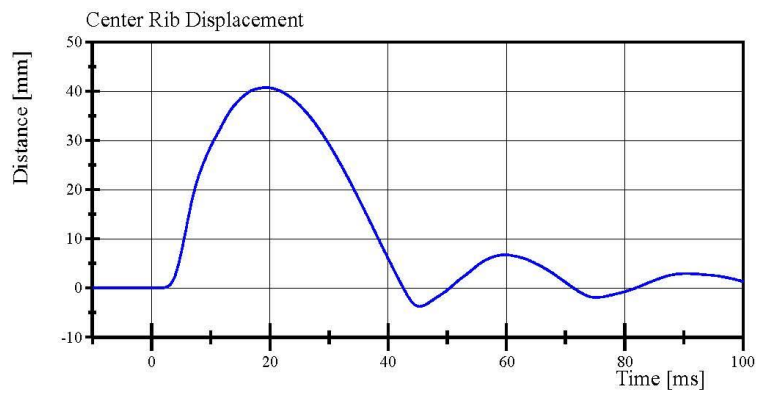
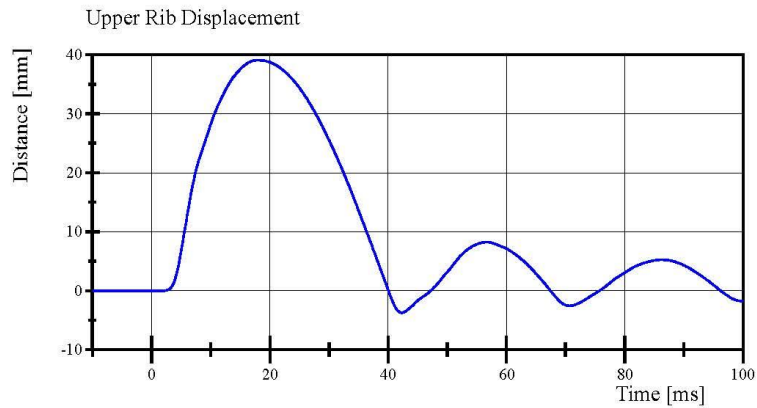


Report Number: F030_ERF93

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Transportation Research Center Inc.

Left Lateral Thorax
ES-2re Serial No. F030 Certification No. 93-1
Test Date: 6/18/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 11:19:21 435



Transportation Research Center Inc.

Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 93-10
Test Date: 6/19/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	69 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-5.95) - (-6.15) m/s	-6.136 m/s	Yes
Maximum Headform Flexion			
Peak	(-45) - (-55) deg	-46.5 deg	Yes
Time of Peak	39 - 53 ms	42.6 ms	Yes
Headform Flexion Decay			
- Peak to Zero	37 - 57 ms	37.0 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Lumbar S/N: DJ7964

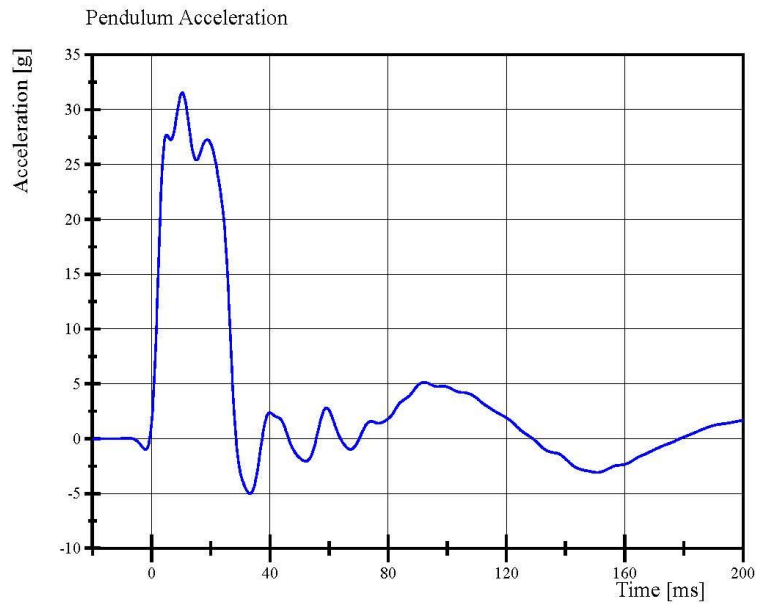
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.19.2024 09:02:01 670

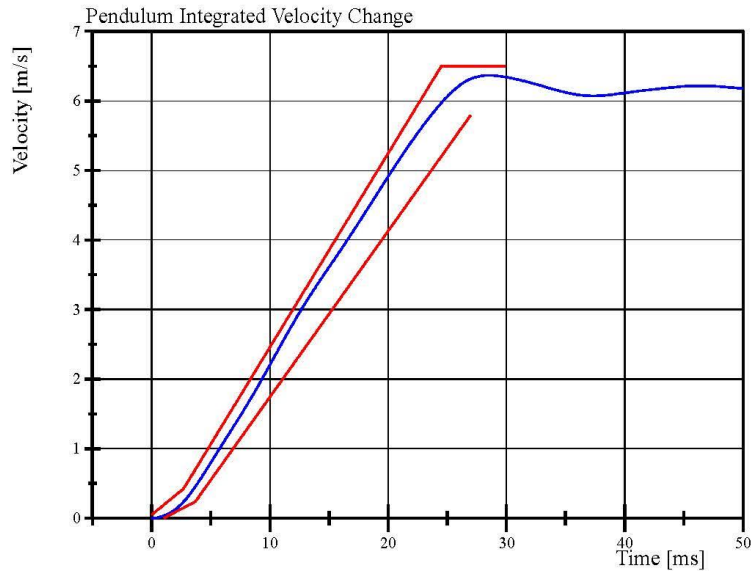


Transportation Research Center Inc.

Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 93-10
Test Date: 6/19/2024



Filter Class: CFC_60
Max: 31.5 g at 10.3 ms
Min: -5.0 g at 33.3 ms



Filter Class: CFC_60
Max: 6.4 m/s at 28.6 ms
Min: 0.0 m/s at 0.0 ms

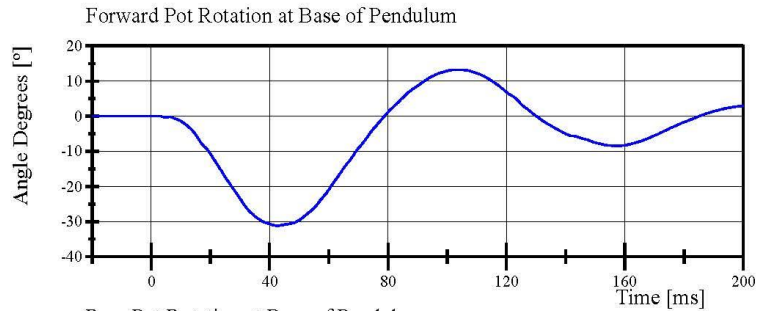
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.19.2024 09:03:29 670

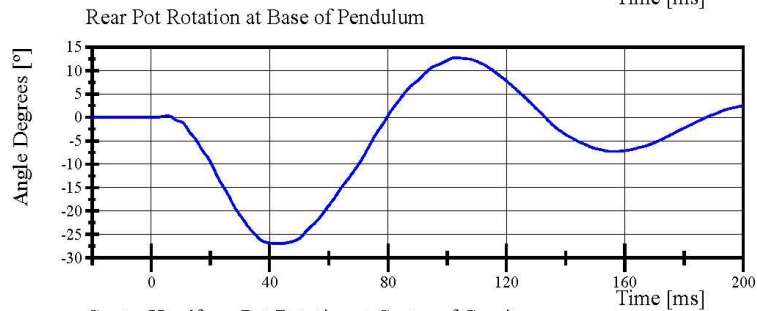


Transportation Research Center Inc.

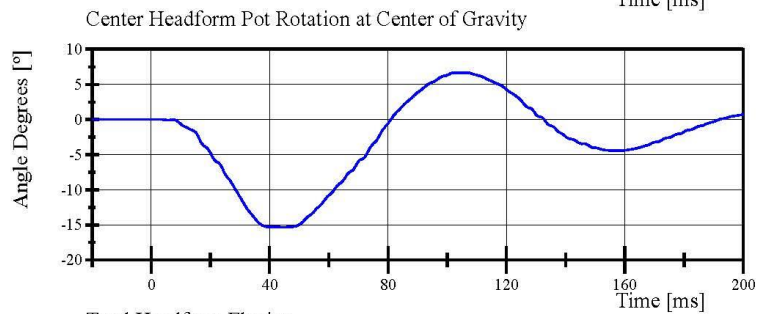
Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 93-10
Test Date: 6/19/2024



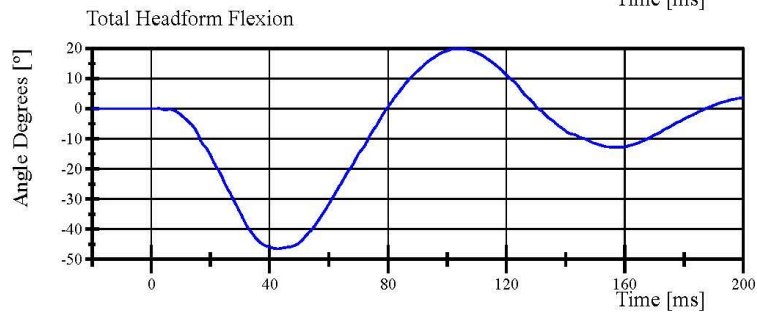
Filter Class: CFC_180
Max: 13.2 ° at 104.3 ms
Min: -31.2 ° at 42.6 ms



Filter Class: CFC_180
Max: 12.8 ° at 102.8 ms
Min: -26.9 ° at 43.8 ms



Filter Class: CFC_180
Max: 6.7 ° at 102.5 ms
Min: -15.3 ° at 45.0 ms



Filter Class: CFC_180
Max: 19.9 ° at 102.6 ms
Min: -46.5 ° at 42.6 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.19.2024 09:03:29 670



Transportation Research Center Inc.

Left Lateral Abdomen

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Test Probe Velocity	3.9 - 4.1 m/s	4.09 m/s	Yes
Test Probe Force			
Peak	4,000 - 4,800 N	4,403.6 N	Yes
Time of Peak	10.6 - 13.0 ms	12.16 ms	Yes
Total Abdominal Force			
Peak	2,200 - 2,700 N	2,611.7 N	Yes
Time of Peak	10.0 - 12.3 ms	11.84 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Abdomen S/N: 1066

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 11:46:21 581

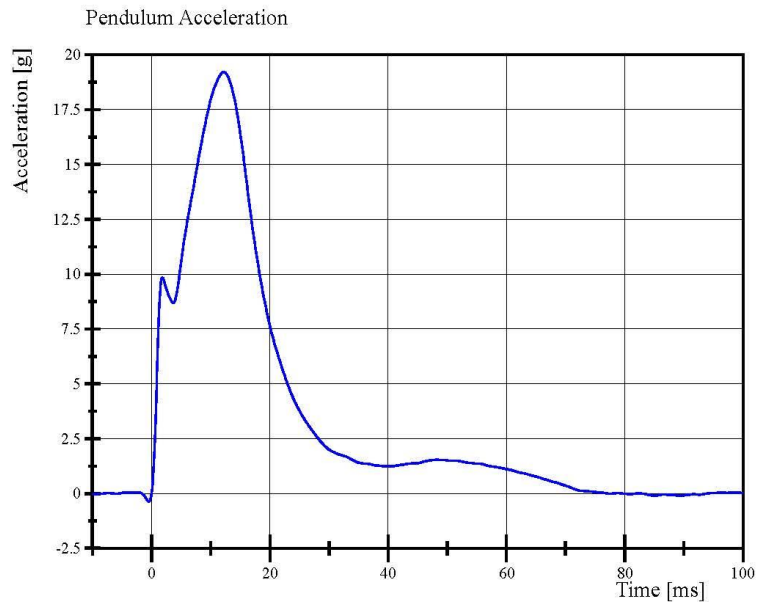


Transportation Research Center Inc.

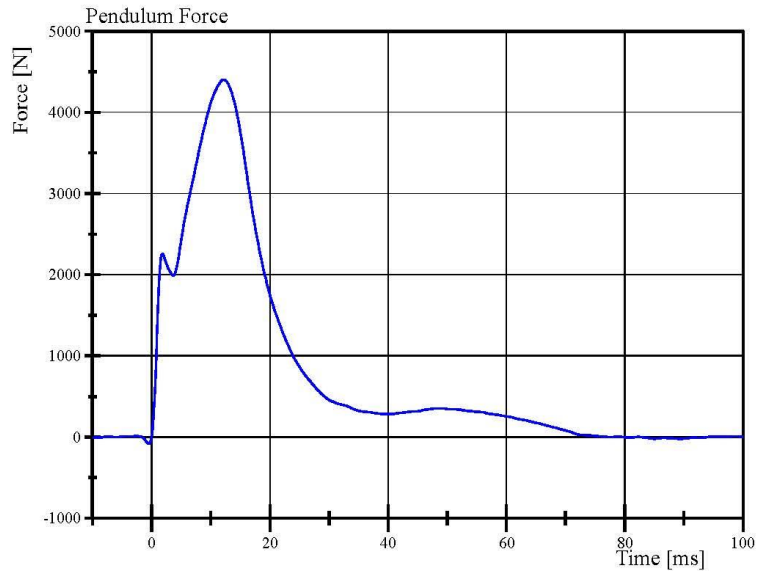
Left Lateral Abdomen

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/18/2024



Filter Class: CFC_180
Max: 19.2 g at 12.2 ms
Min: -0.4 g at -0.5 ms



Filter Class: CFC_180
Max: 4,403.6 N at 12.2 ms
Min: -83.0 N at -0.5 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 11:47:08 581

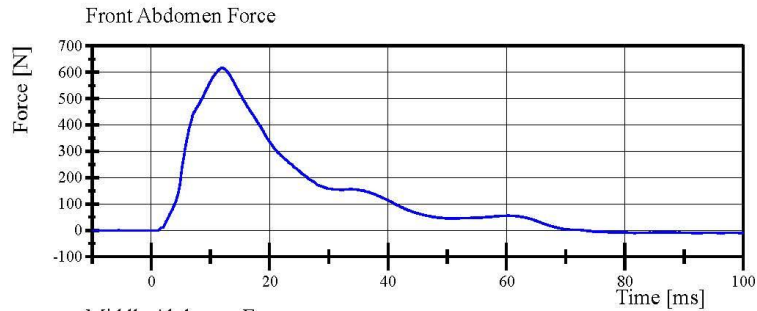


Transportation Research Center Inc.

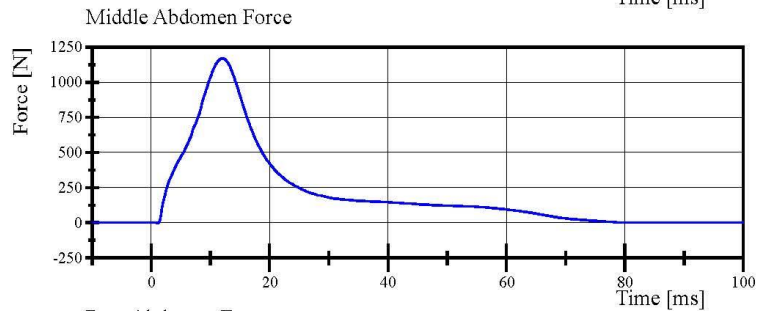
Left Lateral Abdomen

ES-2re Serial No. F030 Certification No. 93-1

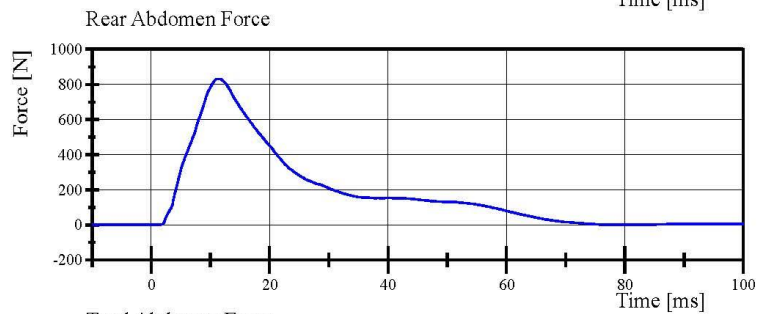
Test Date: 6/18/2024



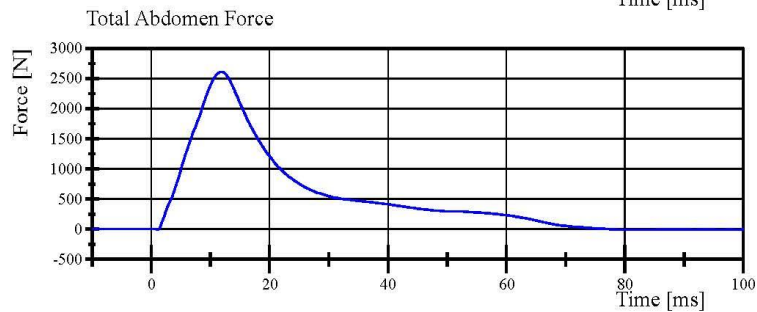
Filter Class: CFC_600
Max: 616.4 N at 12.0 ms
Min: -10.1 N at 92.8 ms



Filter Class: CFC_600
Max: 1,170.4 N at 12.1 ms
Min: -2.3 N at 1.1 ms



Filter Class: CFC_600
Max: 831.3 N at 11.1 ms
Min: -0.2 N at -1.0 ms



Filter Class: CFC_600
Max: 2,611.7 N at 11.8 ms
Min: -8.8 N at 80.7 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 11:47:08 581



Transportation Research Center Inc.

Left Lateral Pelvis

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	65 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Test Probe Force			
Peak	4,700 - 5,400 N	5,153.4 N	Yes
Time of Peak	11.8 - 16.1 ms	13.36 ms	Yes
Pubic Symphysis Force			
Peak	(-1,230) - (-1,590) N	-1,428.9 N	Yes
Time of Peak	12.2 - 17.0 ms	14.32 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Pelvis S/N: NA

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 12:41:55 590

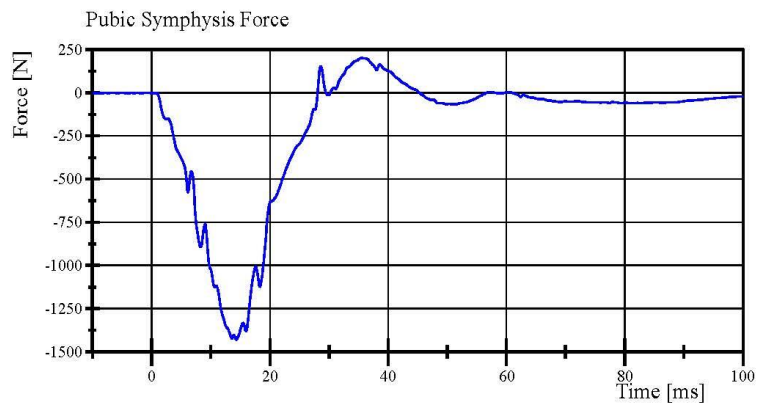
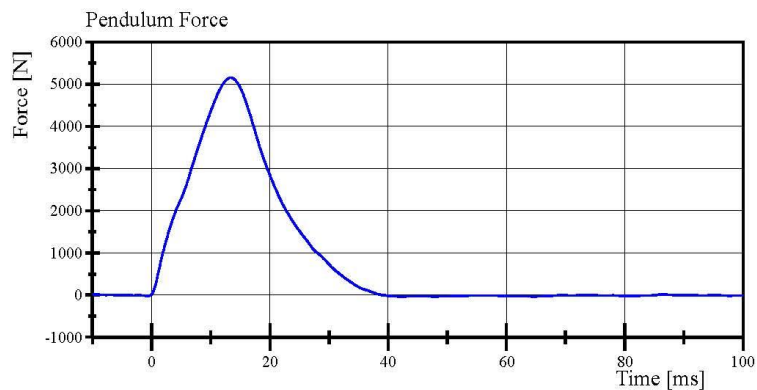
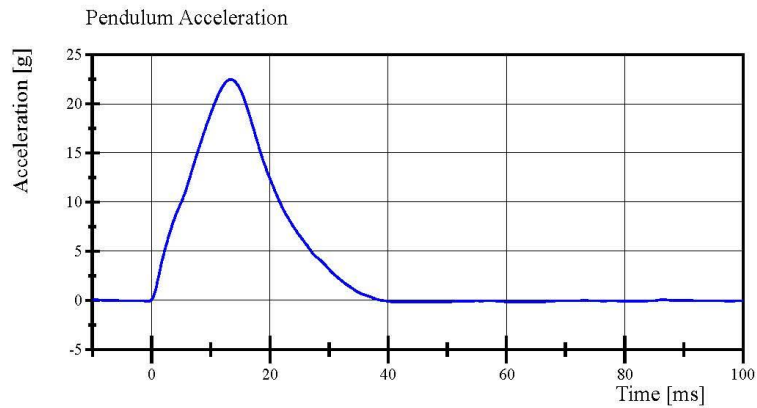


Transportation Research Center Inc.

Left Lateral Pelvis

ES-2re Serial No. F030 Certification No. 93-1

Test Date: 6/18/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

06.18.2024 12:42:41 590



Post-Test Calibration Sheets
Driver S/N F030

Transportation Research Center Inc.
572U ES-2re Dummy
External Dimensions
Serial No. F030 Calibration No. 94

Symbol	Description	Specification	Results	Pass
		mm	mm	
1	Sitting Height	900.0 - 918.0	909	Yes
2	Seat to Shoulder Joint	558.0 - 572.0	560	Yes
3	Seat to Lower Face of Thoracic Spine Box	346.0 - 356.0	347	Yes
4	Seat to Hip Joint (center of bolt)	97.0 - 103.0	98	Yes
5	Sole to Seat, Sitting	433.0 - 451.0	443	Yes
6	Head Width	152.0 - 158.0	154	Yes
7	Shoulder/Arm Width	461.0 - 479.0	475	Yes
8	Thorax Width	322.0 - 332.0	328	Yes
9	Abdomen Width	273.0 - 287.0	279	Yes
10	Pelvis Lap Width	359.0 - 373.0	366	Yes
11	Head Depth	196.0 - 206.0	201	Yes
12	Thorax Depth	262.0 - 272.0	262	Yes
13	Abdomen Depth	194.0 - 204.0	199	Yes
14	Pelvis Depth	235.0 - 245.0	242	Yes
15	Back of Buttocks to Hip Joint (center of bolt)	150.0 - 160.0	156	Yes
16	Back of Buttocks to Front of Knee	597.0 - 615.0	605	Yes

Baseline 10/07/05



Report Number: F030_ERF94

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Transportation Research Center Inc.

Left Lateral Head Drop

ES-2re Serial No. F030 Certification No. 94-1

Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Peak Resultant Acceleration	125 - 155 g	141.7 g	Yes
Peak Longitudinal Acceleration	(-15) - 15 g	7.7 g	Yes
Is Resultant Acceleration Curve Unimodal within 15% of Main Pulse?	< 15 %	4.08 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: DP6812

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 11:37:31 361

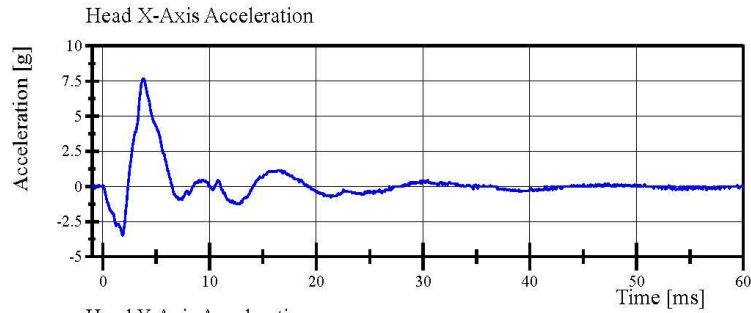


Transportation Research Center Inc.

Left Lateral Head Drop

ES-2re Serial No. F030 Certification No. 94-1

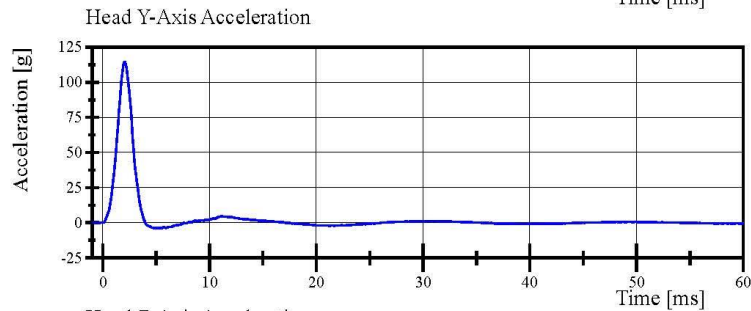
Test Date: 7/1/2024



Filter Class: CFC_1000

Max: 7.7 g at 3.8 ms

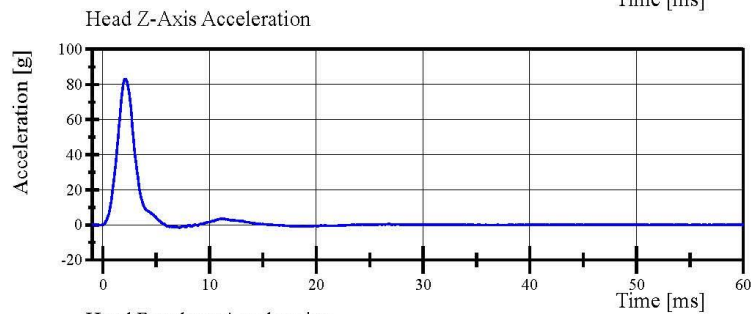
Min: -3.5 g at 1.8 ms



Filter Class: CFC_1000

Max: 114.7 g at 2.1 ms

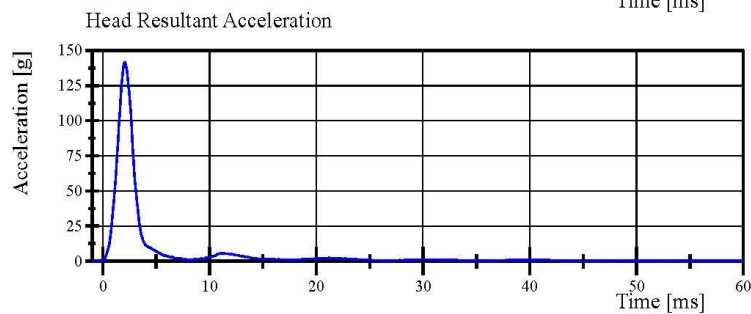
Min: -3.9 g at 5.1 ms



Filter Class: CFC_1000

Max: 83.1 g at 2.1 ms

Min: -1.4 g at 7.2 ms



Filter Class: CFC_1000

Max: 141.7 g at 2.1 ms

Min: 0.0 g at -0.6 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 11:38:04 361



Transportation Research Center Inc.

Left Lateral Neck

ES-2re Serial No. F030 Certification No. 94-2

Test Date: 7/2/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.38 m/s	Yes
Maximum Headform Flexion			
Peak	(-49) - (-59) deg	-53.6 deg	Yes
Time of Peak	54 - 66 ms	56.7 ms	Yes
Headform Flexion Decay			
- Peak to Zero	53 - 88 ms	55.5 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 05053

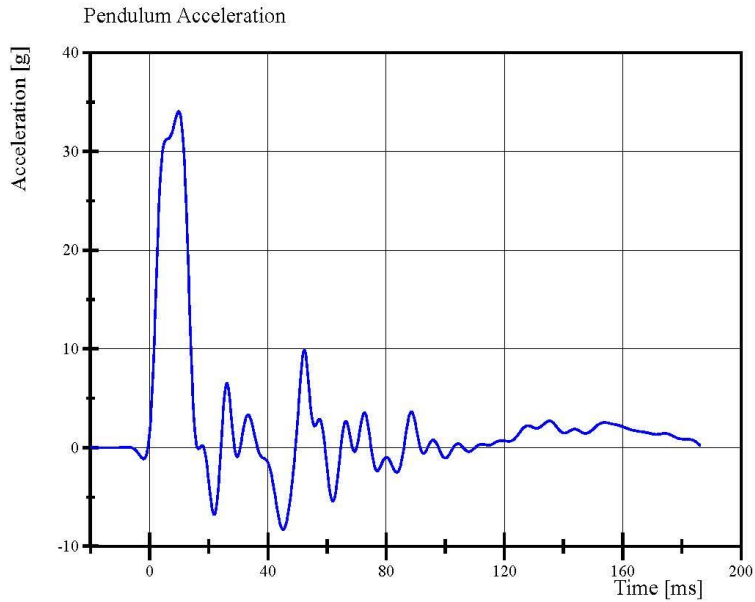
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 10:50:29 1497

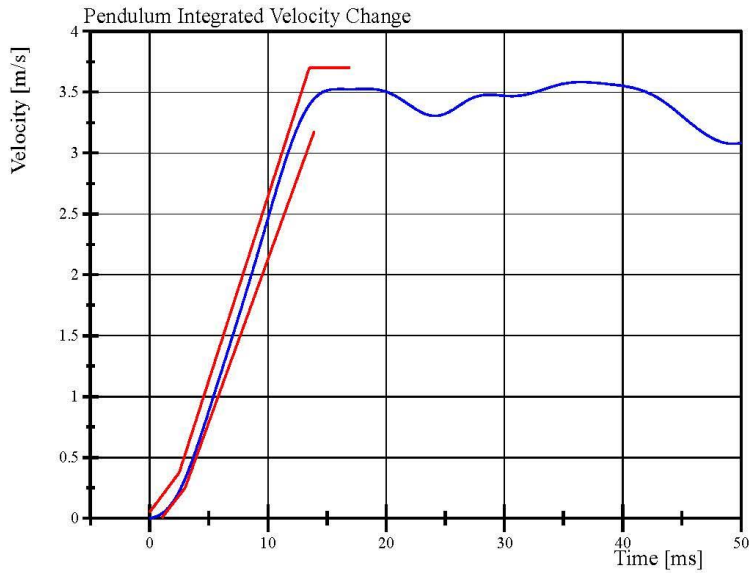


Transportation Research Center Inc.

Left Lateral Neck
ES-2re Serial No. F030 Certification No. 94-2
Test Date: 7/2/2024



Filter Class: CFC_60
Max: 34.0 g at 9.8 ms
Min: -8.3 g at 45.1 ms



Filter Class: CFC_60
Max: 3.6 m/s at 36.5 ms
Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 10:51:32 1497

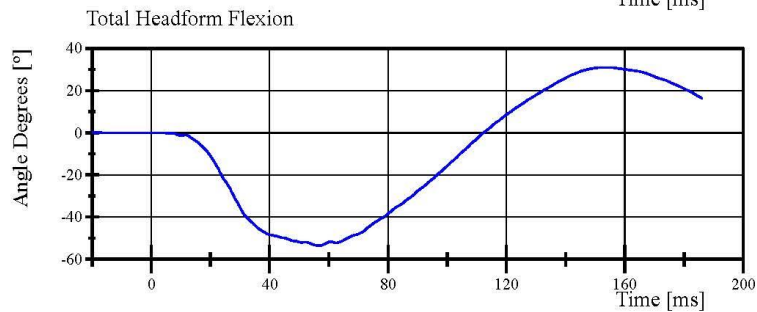
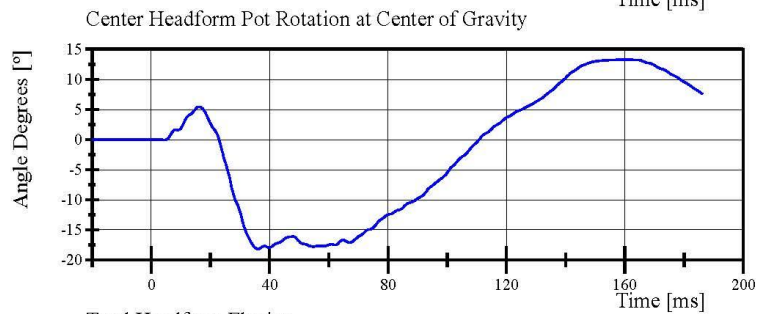
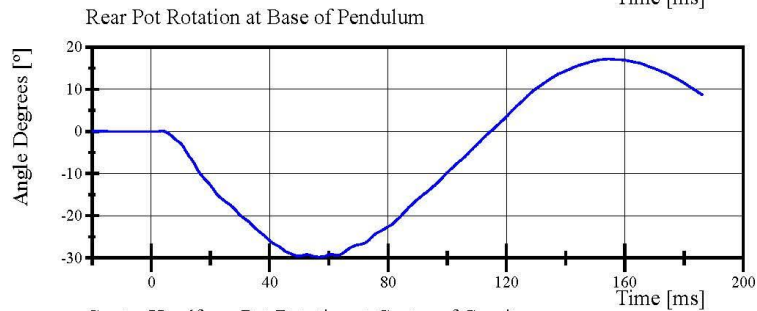
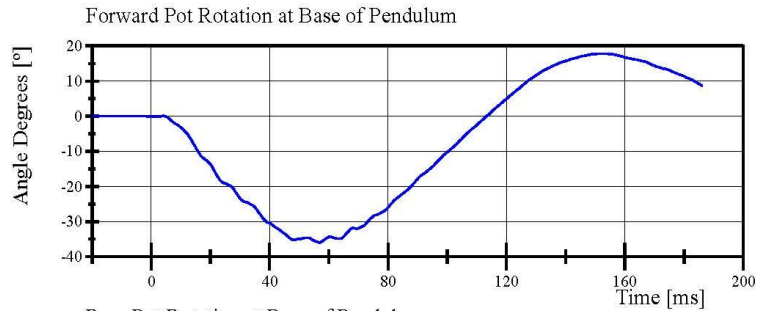


Transportation Research Center Inc.

Left Lateral Neck

ES-2re Serial No. F030 Certification No. 94-2

Test Date: 7/2/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 10:51:33 1497



Transportation Research Center Inc.

Left Lateral Shoulder

ES-2re Serial No. F030 Certification No. 94-2

Test Date: 7/2/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	60 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.20 m/s	Yes
Test Probe Acceleration	(-7.5) - (-10.5) g	-10.92 g	No

Test does not meet specifications.

Condition: Used

Comments:

Arm S/N: 175-3501-07014

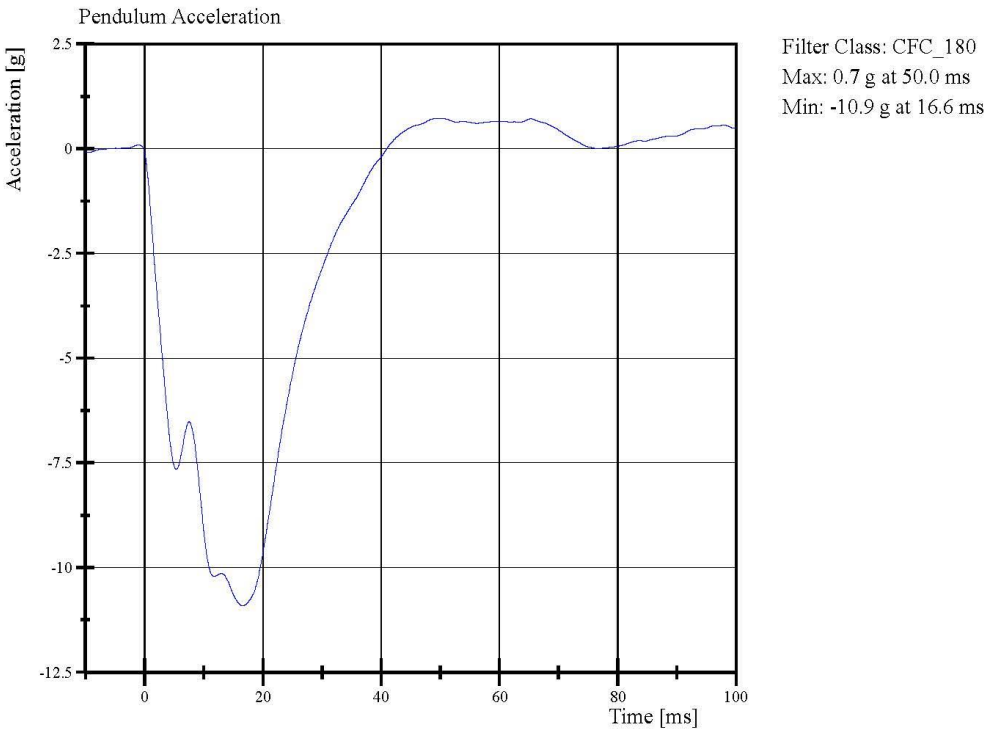
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 13:52:00 536



Transportation Research Center Inc.

Left Lateral Shoulder
ES-2re Serial No. F030 Certification No. 94-2
Test Date: 7/2/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 13:53:00 536



Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	39.8 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 462 mm

Rib Foam S/N: EK6973

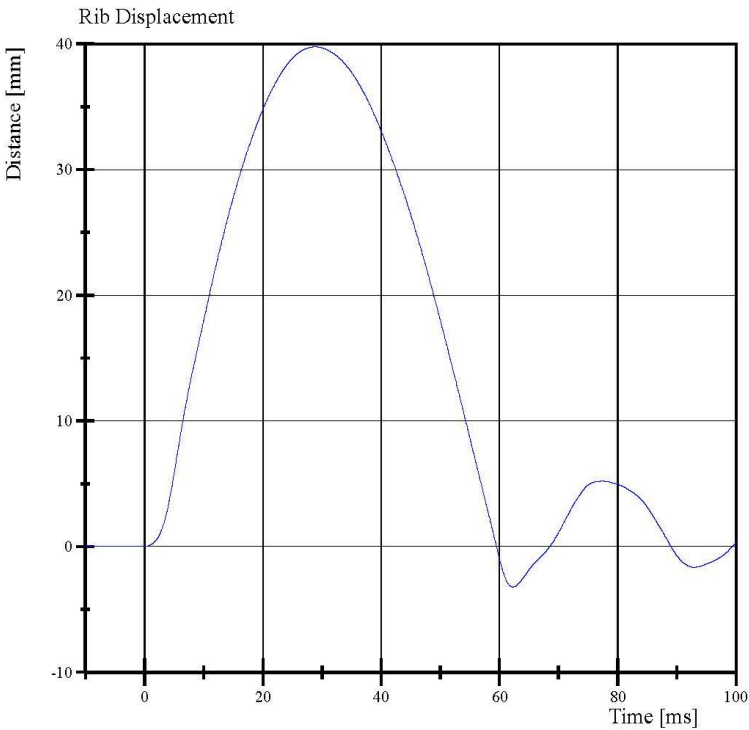
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:05:32 604



Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024



Filter Class: CFC_180
Max: 39.8 mm at 28.9 ms
Min: -3.2 mm at 62.3 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:05:52 604



Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	47.7 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 816 mm

Rib Foam S/N: EK6973

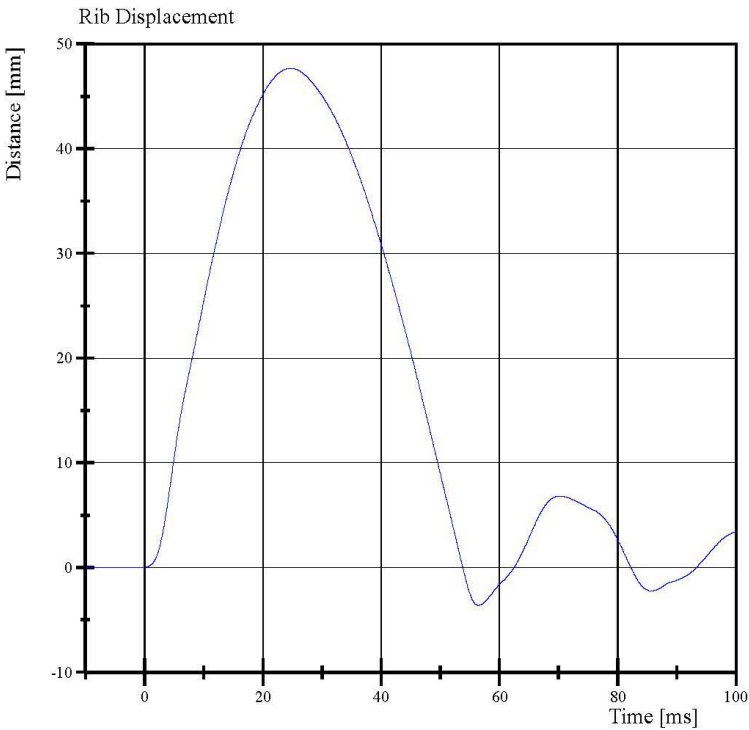
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 12:53:13 524



Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024



Filter Class: CFC_180
Max: 47.7 mm at 24.7 ms
Min: -3.6 mm at 56.4 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 12:53:47 524



Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.8 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 462 mm

Rib Foam S/N: EK6970

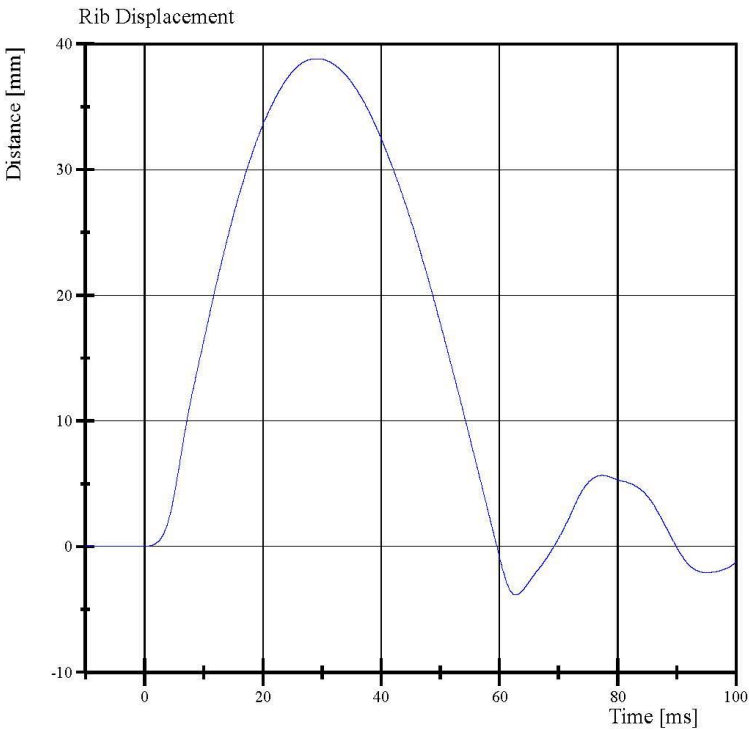
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:13:37 629



Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024



Filter Class: CFC_180
Max: 38.8 mm at 29.1 ms
Min: -3.9 mm at 62.7 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:14:01 629



Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	49.9 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 816 mm

Rib Foam S/N: EK6970

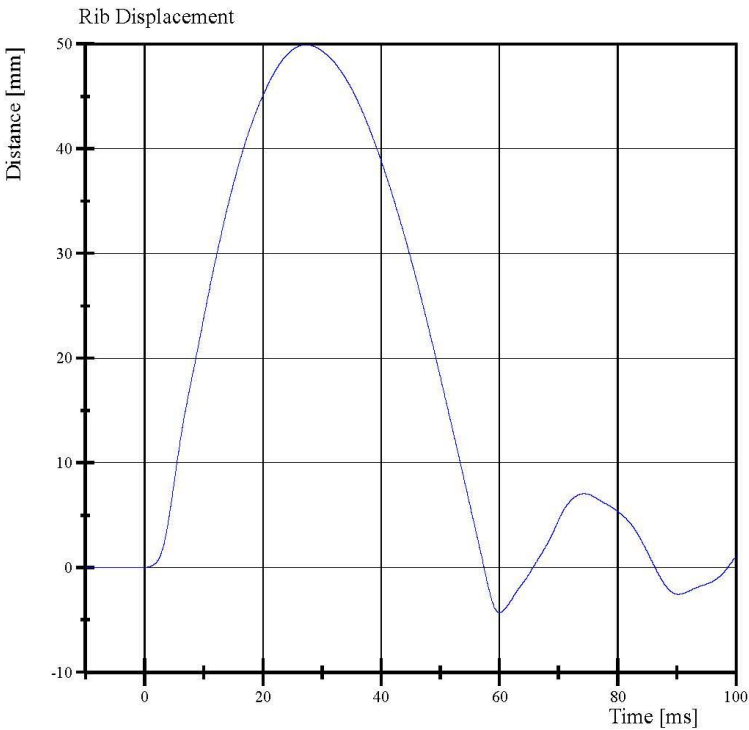
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:10:09 518



Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024



Filter Class: CFC_180
Max: 49.9 mm at 27.3 ms
Min: -4.3 mm at 60.0 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:10:35 518



Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.0 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 462 mm

Rib Foam S/N: EK6971

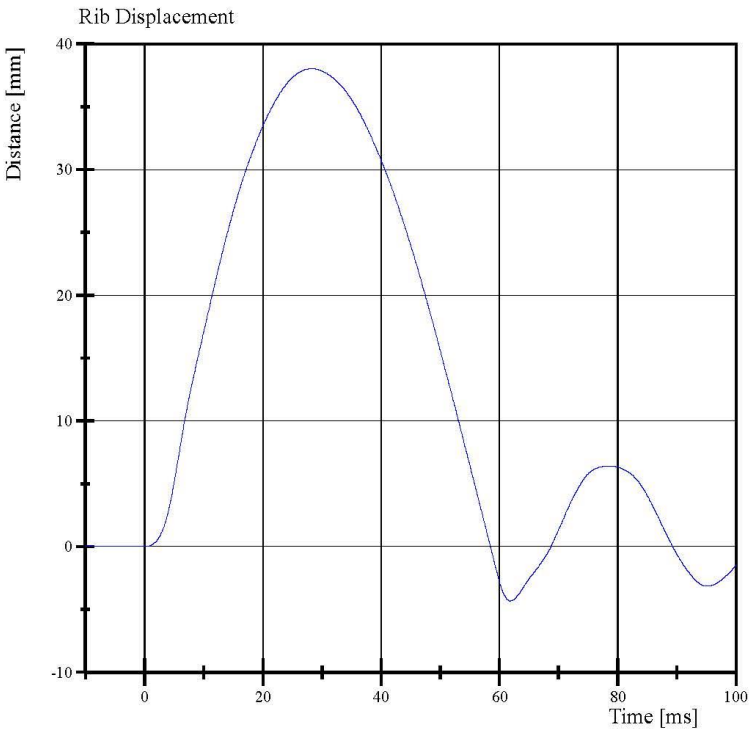
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:23:18 608



Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024



Filter Class: CFC_180
Max: 38.0 mm at 28.3 ms
Min: -4.3 mm at 61.8 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:23:47 608



Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	46.7 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Drop Height: 816 mm

Rib Foam S/N: EK6971

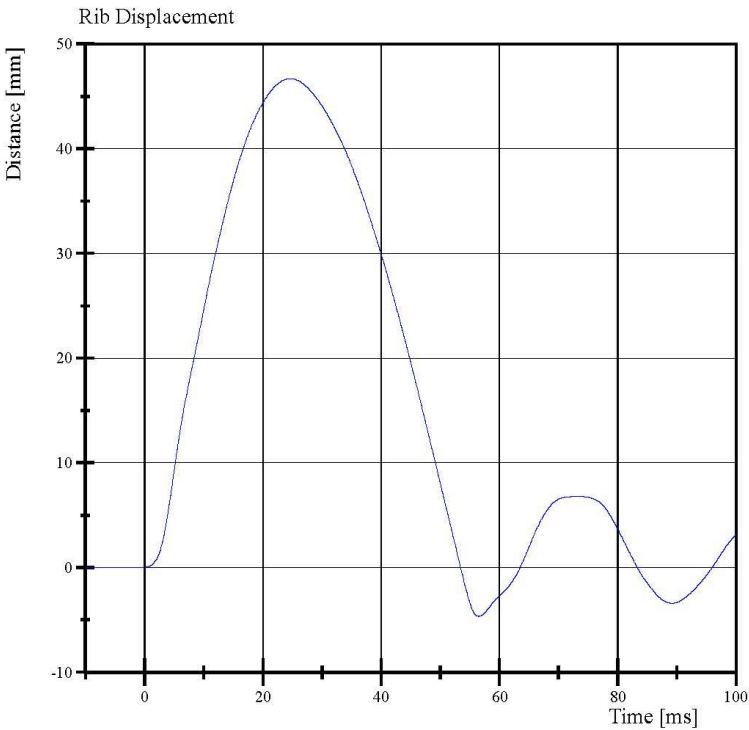
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:17:28 500



Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/1/2024



Filter Class: CFC_180
Max: 46.7 mm at 24.6 ms
Min: -4.7 mm at 56.5 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.01.2024 13:17:56 500



Transportation Research Center Inc.

Left Lateral Thorax

ES-2re Serial No. F030 Certification No. 94-1

Test Date: 7/2/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Impactor Velocity	5.4 - 5.60 m/s	5.420 m/s	Yes
Peak Impactor Force after 6 ms	(-5,100) - (-6,200) N	-5,968.0 N	Yes
Upper Rib Displacement	34 - 41 mm	38.2 mm	Yes
Center Rib Displacement	37 - 45 mm	40.4 mm	Yes
Lower Rib Displacement	37 - 44 mm	40.0 mm	Yes

Test meets specifications.

Condition: Used

Comments:

Upper Rib Module S/N: 175-4008-A

Upper Rib Foam S/N: 175-4003-EK6973

Middle Rib Module S/N: 175-4008-A

Middle Rib Foam S/N: 175-4003-EK6970

Lower Rib Module S/N: 175-4008-A-06-017

Lower Rib Foam S/N: 175-4008-EK6971

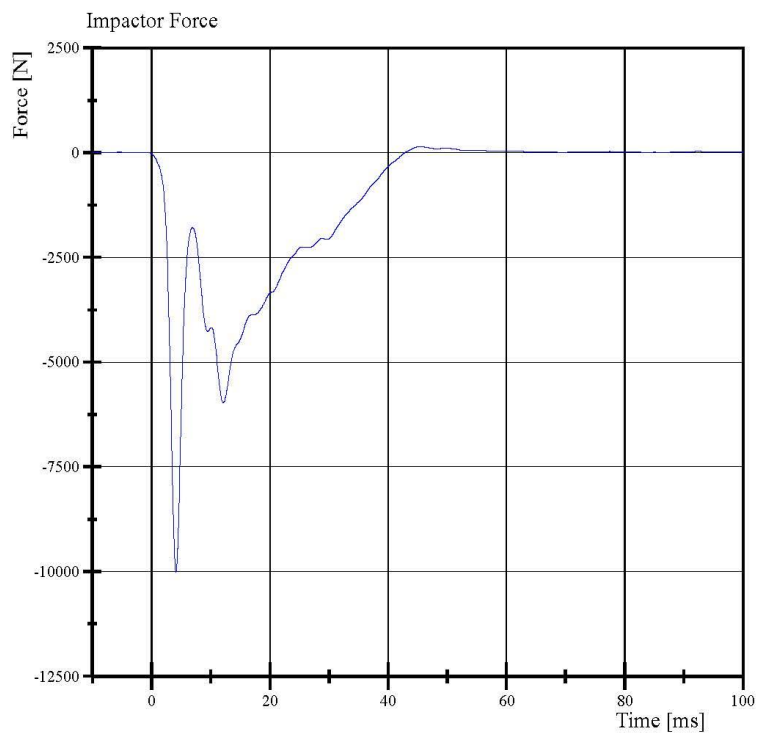
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 12:57:11 538



Transportation Research Center Inc.

Left Lateral Thorax
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/2/2024



Filter Class: CFC_180
Max: 151.9 N at 45.4 ms
Min: -10,020.5 N at 4.1 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 12:58:09 538

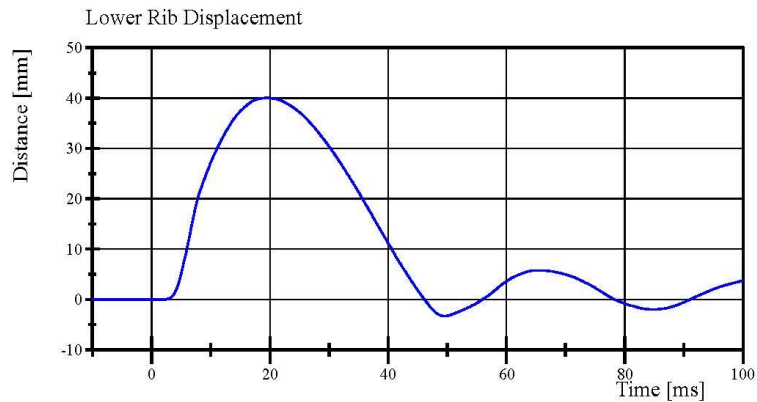
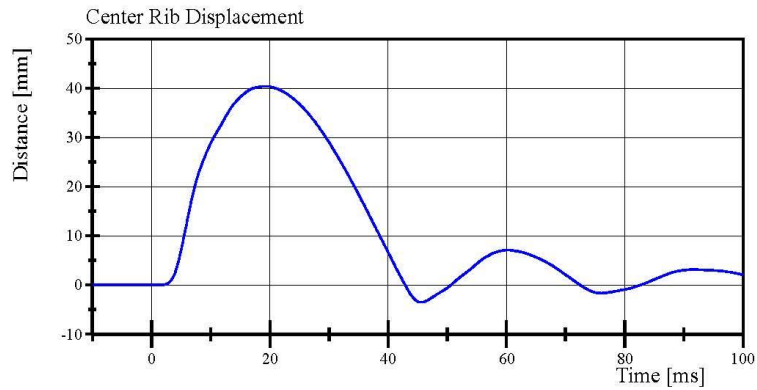
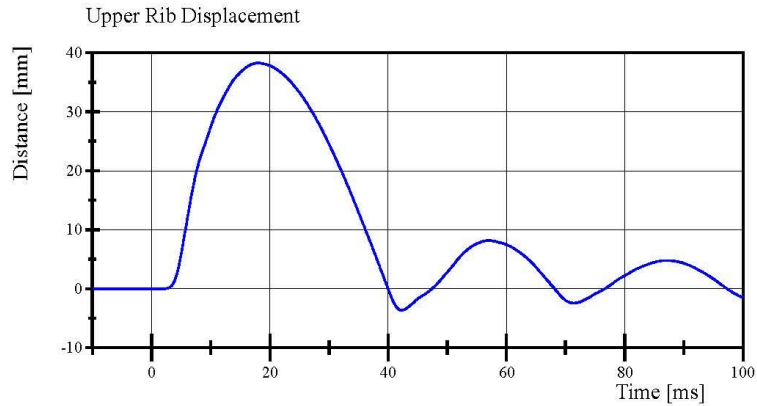


Report Number: F030_ERF94

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Transportation Research Center Inc.

Left Lateral Thorax
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/2/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

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Transportation Research Center Inc.

Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/2/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-5.95) - (-6.15) m/s	-6.130 m/s	Yes
Maximum Headform Flexion			
Peak	(-45) - (-55) deg	-43.5 deg	No
Time of Peak	39 - 53 ms	42.0 ms	Yes
Headform Flexion Decay			
- Peak to Zero	37 - 57 ms	34.0 ms	No

Test does not meet specifications.

Condition: Used

Comments:

Lumbar S/N: DJ7964

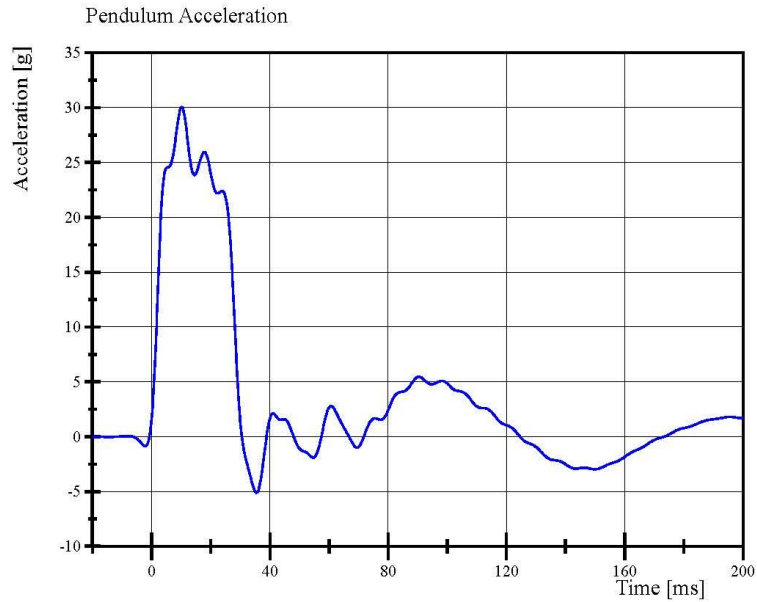
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 11:38:39 670

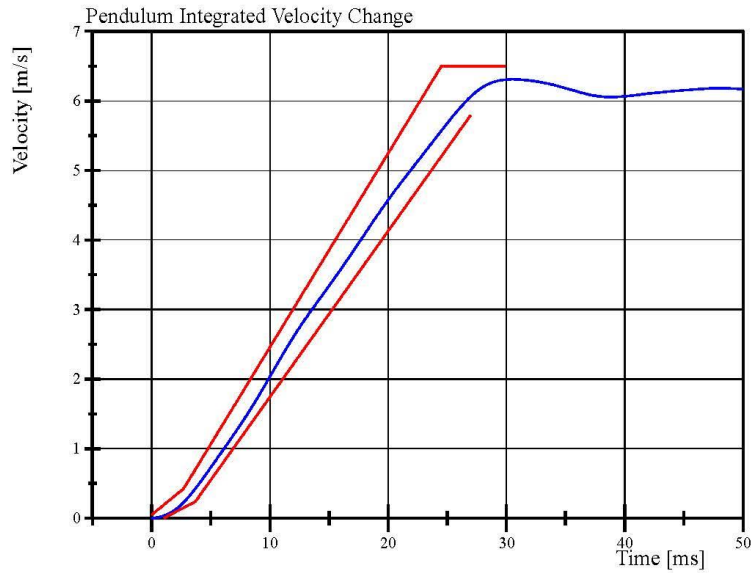


Transportation Research Center Inc.

Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/2/2024



Filter Class: CFC_60
Max: 30.1 g at 10.2 ms
Min: -5.1 g at 35.4 ms



Filter Class: CFC_60
Max: 6.3 m/s at 30.5 ms
Min: 0.0 m/s at 0.0 ms

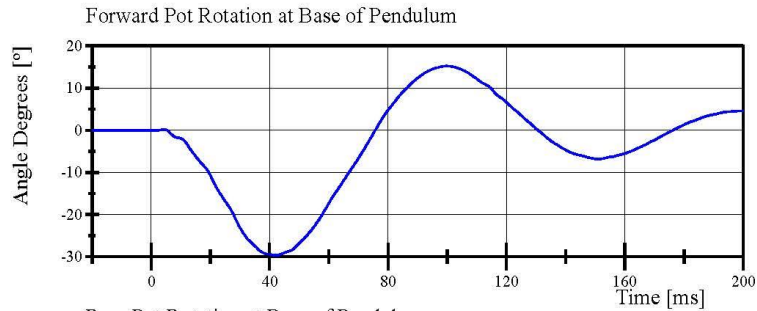
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 11:38:58 670

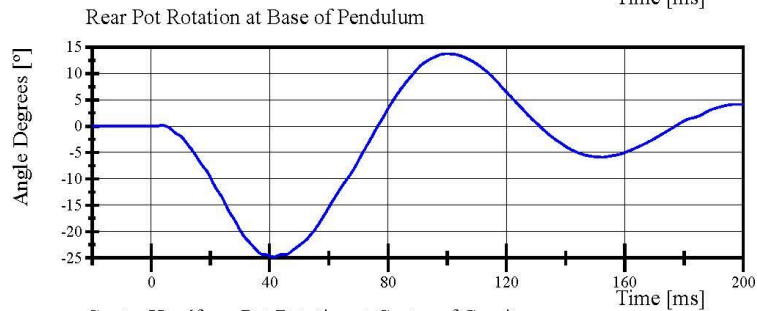


Transportation Research Center Inc.

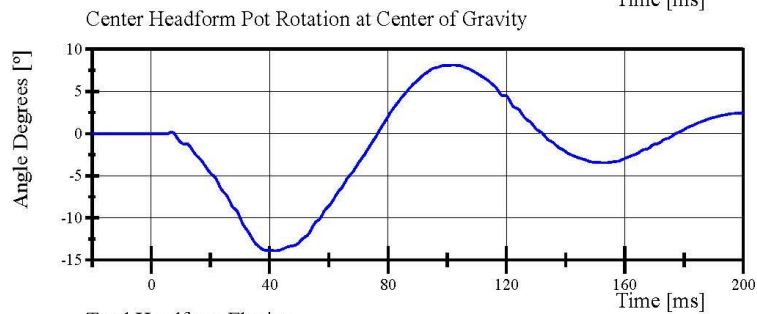
Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 94-1
Test Date: 7/2/2024



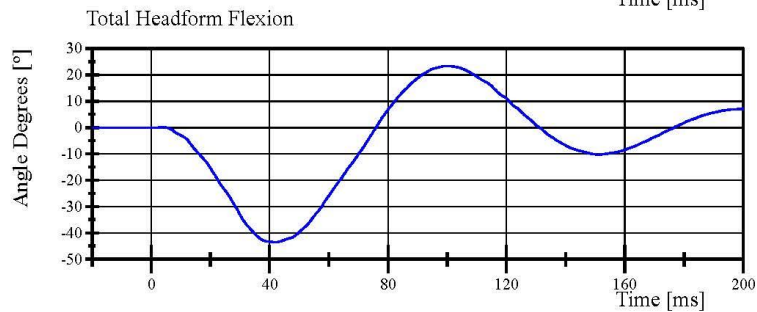
Filter Class: CFC_180
Max: 15.2 ° at 99.8 ms
Min: -29.7 ° at 42.0 ms



Filter Class: CFC_180
Max: 13.7 ° at 99.8 ms
Min: -24.8 ° at 41.4 ms



Filter Class: CFC_180
Max: 8.1 ° at 102.5 ms
Min: -13.9 ° at 41.9 ms



Filter Class: CFC_180
Max: 23.3 ° at 99.8 ms
Min: -43.5 ° at 42.0 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 11:38:58 670



Transportation Research Center Inc.

Left Lateral Abdomen

ES-2re Serial No. F030 Certification No. 94-1

Test Date: 7/2/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Test Probe Velocity	3.9 - 4.1 m/s	4.09 m/s	Yes
Test Probe Force			
Peak	4,000 - 4,800 N	4,406.9 N	Yes
Time of Peak	10.6 - 13.0 ms	12.08 ms	Yes
Total Abdominal Force			
Peak	2,200 - 2,700 N	2,610.2 N	Yes
Time of Peak	10.0 - 12.3 ms	11.92 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Abdomen S/N: 1066

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 13:12:51 688

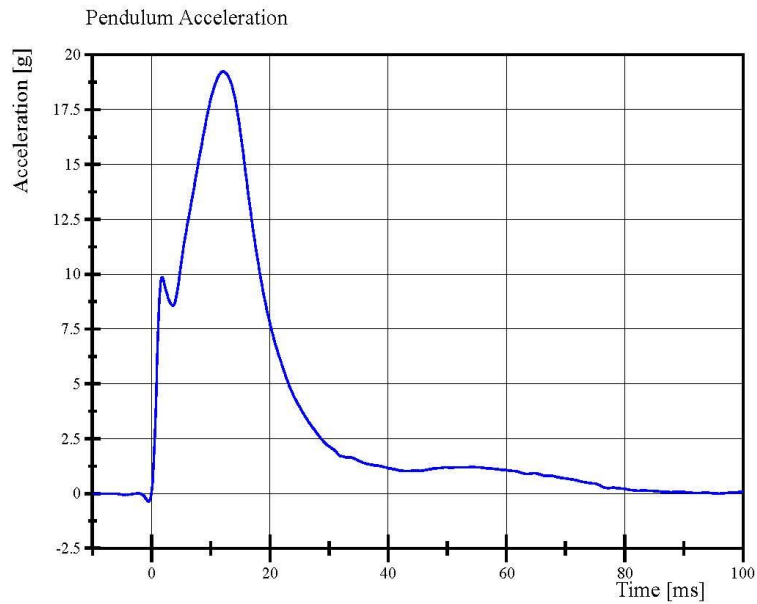


Transportation Research Center Inc.

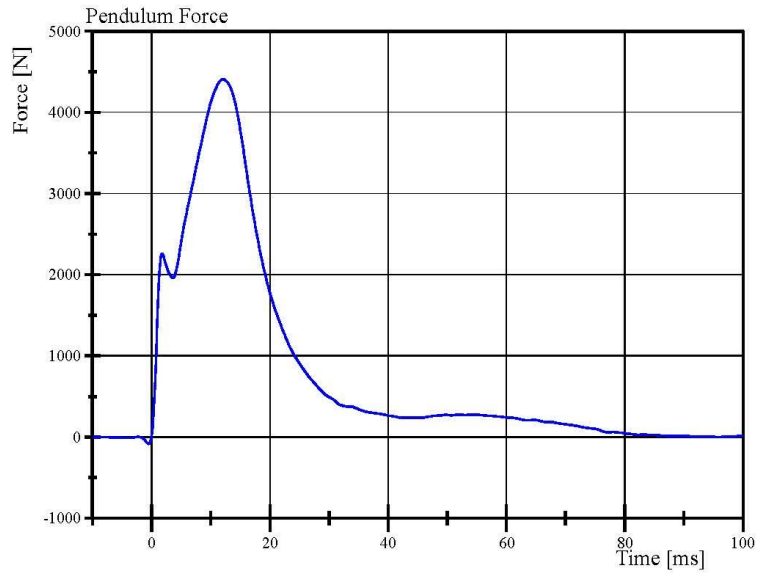
Left Lateral Abdomen

ES-2re Serial No. F030 Certification No. 94-1

Test Date: 7/2/2024



Filter Class: CFC_180
Max: 19.2 g at 12.1 ms
Min: -0.4 g at -0.5 ms



Filter Class: CFC_180
Max: 4,406.9 N at 12.1 ms
Min: -82.8 N at -0.5 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 13:13:31 688

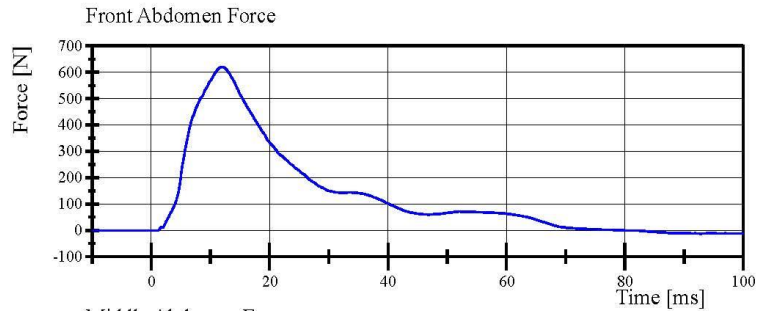


Transportation Research Center Inc.

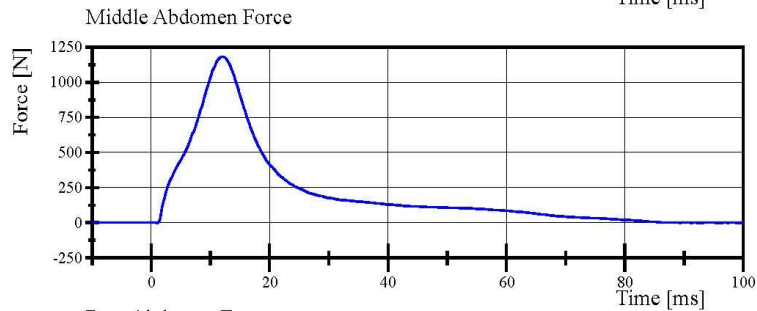
Left Lateral Abdomen

ES-2re Serial No. F030 Certification No. 94-1

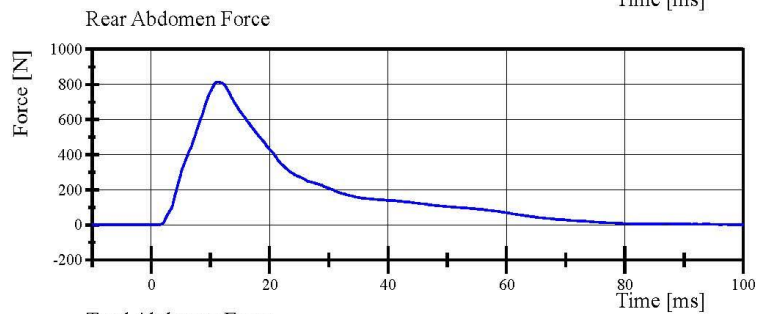
Test Date: 7/2/2024



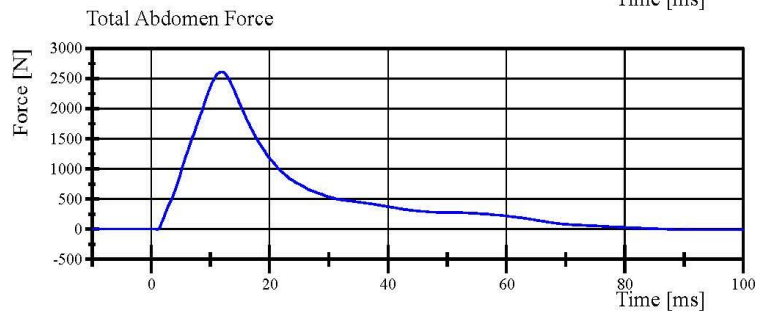
Filter Class: CFC_600
Max: 620.5 N at 12.0 ms
Min: -12.7 N at 92.8 ms



Filter Class: CFC_600
Max: 1,182.0 N at 12.0 ms
Min: -1.8 N at 1.0 ms



Filter Class: CFC_600
Max: 814.5 N at 11.2 ms
Min: -0.2 N at 1.2 ms



Filter Class: CFC_600
Max: 2,610.2 N at 11.9 ms
Min: -12.4 N at 100.0 ms

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 13:13:31 688



Transportation Research Center Inc.

Left Lateral Pelvis

ES-2re Serial No. F030 Certification No. 94-2

Test Date: 7/2/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Test Probe Force			
Peak	4,700 - 5,400 N	5,677.4 N	No
Time of Peak	11.8 - 16.1 ms	13.76 ms	Yes
Pubic Symphysis Force			
Peak	(-1,230) - (-1,590) N	-1,464.4 N	Yes
Time of Peak	12.2 - 17.0 ms	15.36 ms	Yes

Test does not meet specifications.

Condition: Used

Comments:

Pelvis S/N: NA

Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 14:05:18 557

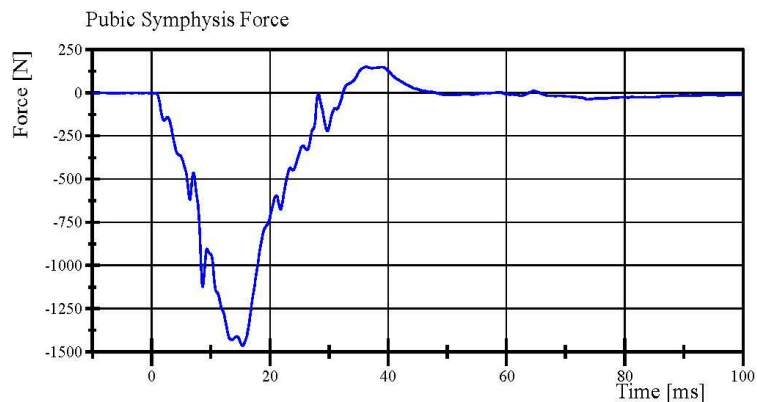
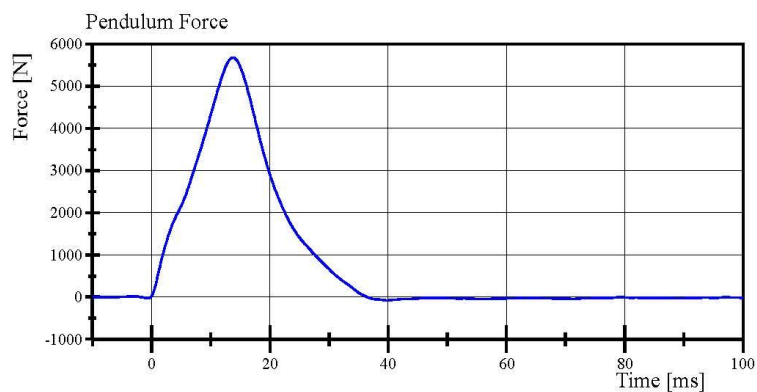
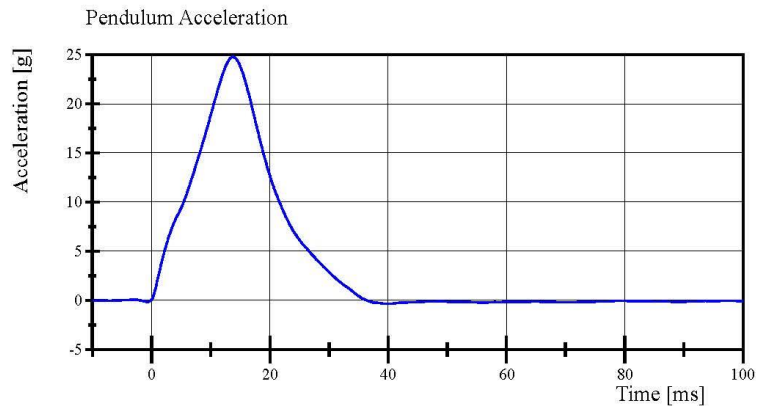


Transportation Research Center Inc.

Left Lateral Pelvis

ES-2re Serial No. F030 Certification No. 94-2

Test Date: 7/2/2024



Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

07.02.2024 14:06:22 557



Pre-Test Calibration Sheets
Passenger S/N DQ0570

Transportation Research Center Inc.
SIDI's Dummy - Level D
External Dimensions
Serial No. DQ0570 Calibration No. 26

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	785	Yes
B	Shoulder Pivot Height	437.0 - 453.0	445	Yes
C	H-Point Height	79.0 - 89.0	83	Yes
D	H-Point from Seat Back	141.0 - 151.0	147	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	101	Yes
F	Thigh Clearance	119.0 - 135.0	130	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	184	Yes
J	Head Circumference	541.0 - 551.0	545	Yes
K	Buttock to Knee Length	514.0 - 540.0	533	Yes
L	Popliteal Height	343.0 - 369.0	353	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	400	Yes
N	Buttock Popliteal Length	416.0 - 442.0	427	Yes
O	Chest Depth without Jacket	195.0 - 211.0	200	Yes
P	Foot Length (right)	216.0 - 232.0	220	Yes
P	Foot Length (left)	216.0 - 232.0	220	Yes
Q	Hip Breadth	313.0 - 323.0	316	Yes
R	Arm Length	249.0 - 259.0	254	Yes
S	Knee Joint to seat Back	478.0 - 493.0	486	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	349	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	870	Yes
Z	Waist Circumference	761.0 - 791.0	780	Yes

Revised 9/29/2005



Report Number: DQ0570_S2H26

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Transportation Research Center Inc.

Left Lateral Head Drop

SID IIS Serial No. DQ0570 Certification No. 26-2

Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	127.7 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-1.9 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	< 15 %	1.48 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: DP8345

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.18.2024 09:41:26 235

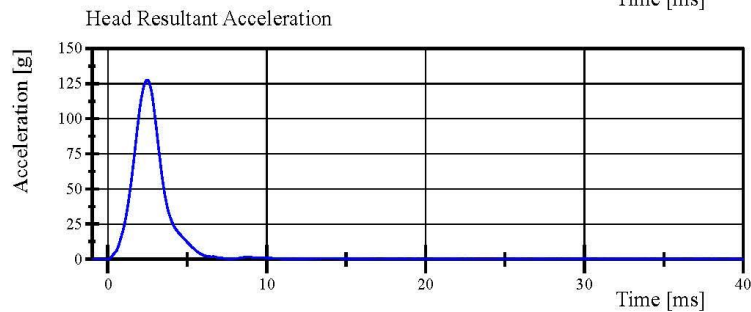
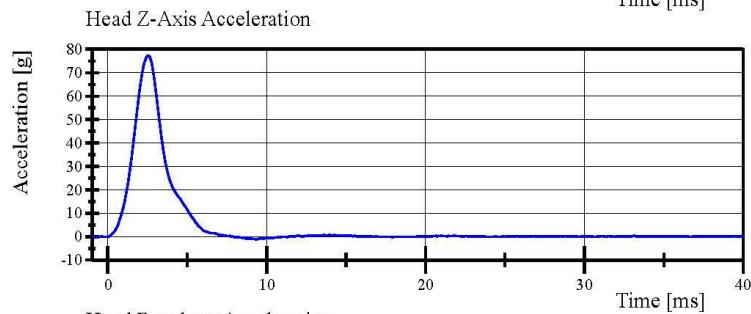
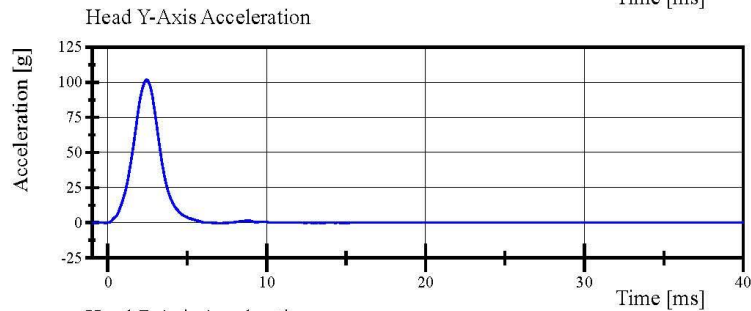
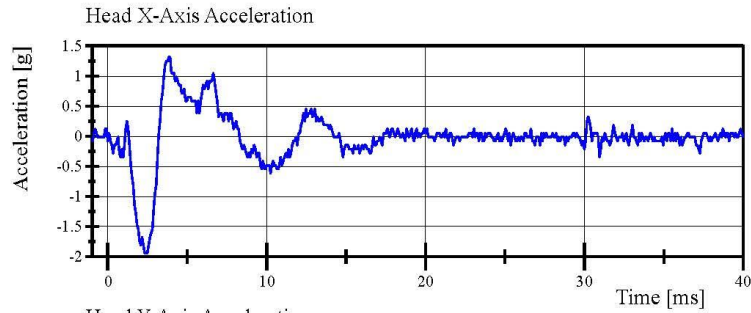


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIS Serial No. DQ0570 Certification No. 26-2

Test Date: 6/18/2024



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.18.2024 09:41:49 235



Transportation Research Center Inc.

Left Lateral Neck

SID IIS Serial No. DQ0570 Certification No. 26-2

Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.616 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.347 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.478 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.701 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.660 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.803 m/s	Yes
Maximum Headform Flexion			
Peak	(-71) - (-81) deg	-72.1 deg	Yes
Time of Peak	50 - 70 ms	60.4 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	39.3 N·m	Yes
Decay to 0 N·m	102 - 126 ms	110.2 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 717

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 11:13:26 751

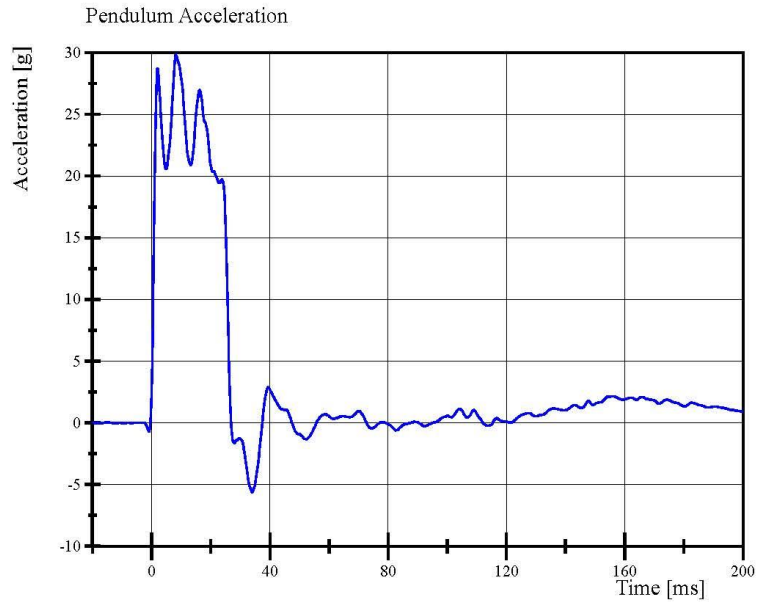


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DQ0570 Certification No. 26-2

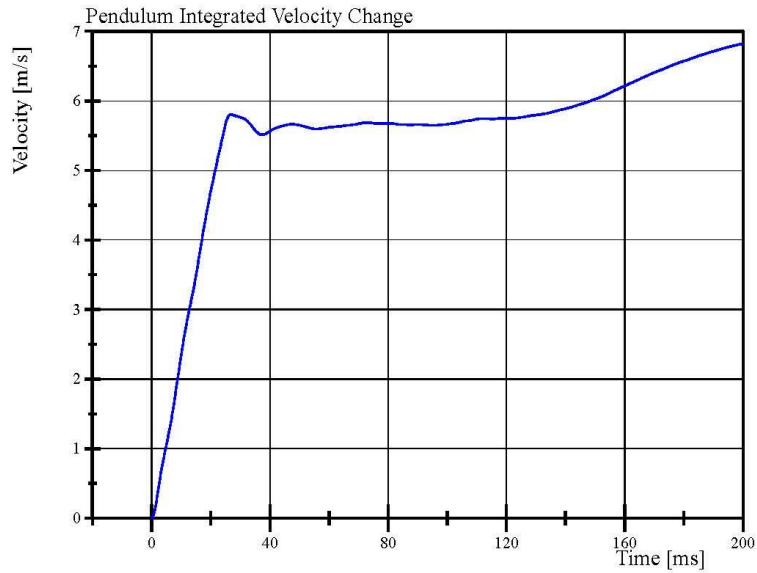
Test Date: 6/14/2024



Filter Class: CFC_180

Max: 29.8 g at 8.2 ms

Min: -5.6 g at 34.0 ms



Filter Class: CFC_180

Max: 6.8 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 11:13:49 751

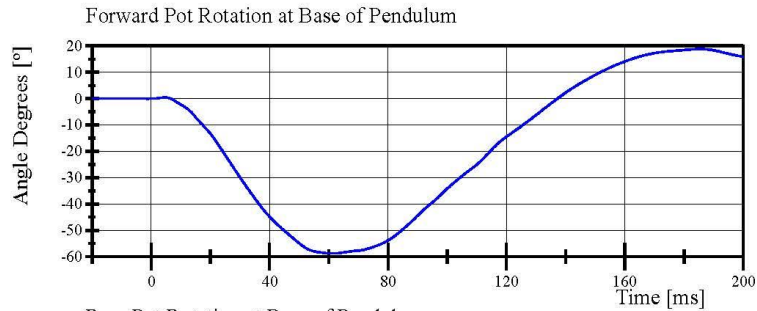


Transportation Research Center Inc.

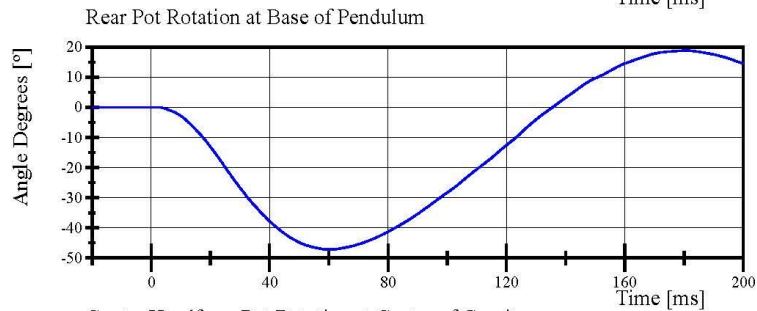
Left Lateral Neck

SID IIS Serial No. DQ0570 Certification No. 26-2

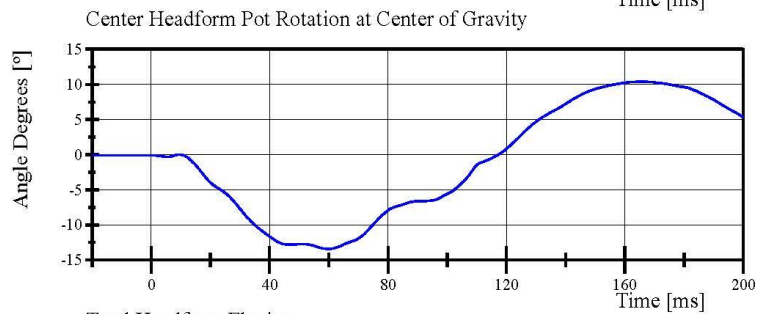
Test Date: 6/14/2024



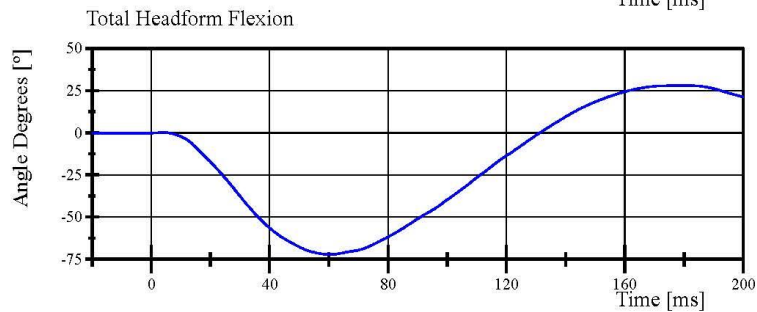
Filter Class: CFC_60
Max: 18.9 ° at 185.4 ms
Min: -58.7 ° at 61.3 ms



Filter Class: CFC_60
Max: 18.8 ° at 180.7 ms
Min: -47.2 ° at 60.3 ms



Filter Class: CFC_60
Max: 10.4 ° at 165.8 ms
Min: -13.4 ° at 59.8 ms



Filter Class: CFC_60
Max: 28.1 ° at 180.9 ms
Min: -72.1 ° at 60.4 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 11:13:50 751



Transportation Research Center Inc.

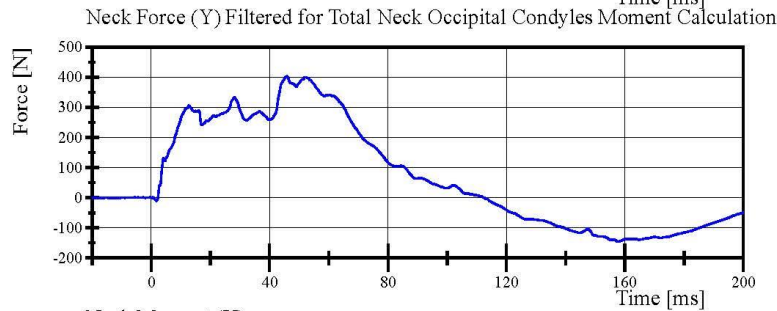
Left Lateral Neck

SID IIs Serial No. DQ0570 Certification No. 26-2

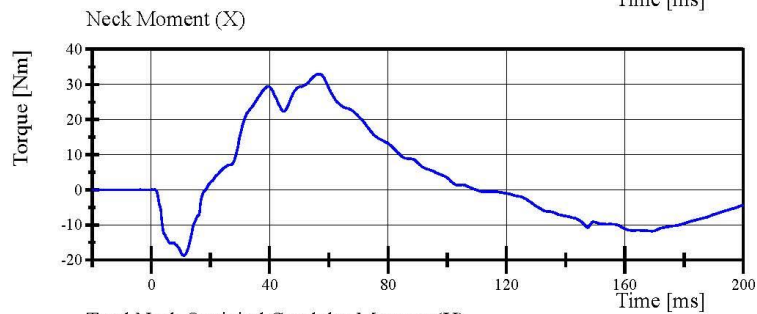
Test Date: 6/14/2024



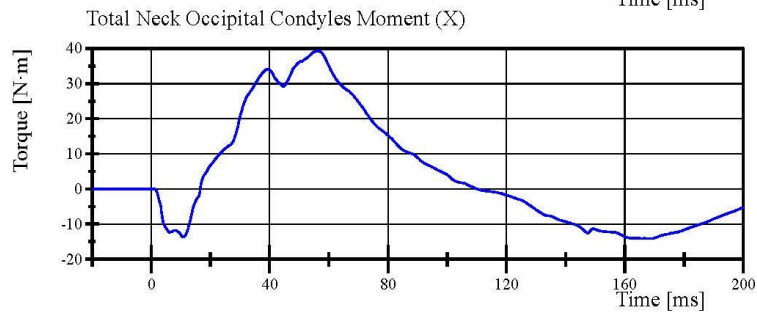
Filter Class: CFC_1000
Max: 405.3 N at 45.8 ms
Min: -145.7 N at 157.5 ms



Filter Class: CFC_600
Max: 403.6 N at 45.8 ms
Min: -145.5 N at 157.5 ms



Filter Class: CFC_600
Max: 33.0 Nm at 56.6 ms
Min: -18.7 Nm at 11.0 ms



Filter Class: Without_(Constar
Max: 39.3 N·m at 56.4 ms
Min: -14.1 N·m at 168.6 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 11:13:50 751



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DQ0570 Certification No. 26-1

Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.5 g	Yes
Shoulder Displacement	28 - 37 mm	32.7 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.0 g	Yes

Test meets specifications.

Condition: Used

Comments:

Left Arm S/N: DP8451

Shoulder Rib S/N: DO9814

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 12:45:25 876

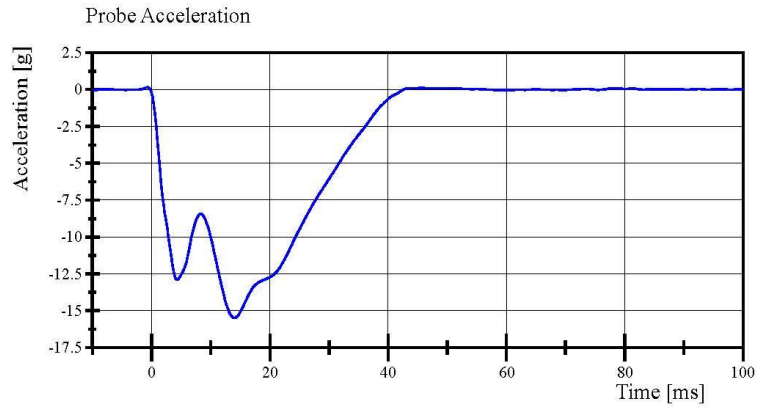


Transportation Research Center Inc.

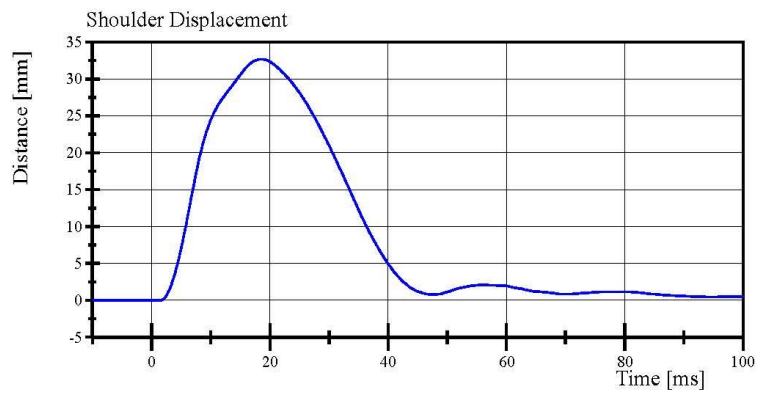
Left Lateral Shoulder

SID IIs Serial No. DQ0570 Certification No. 26-1

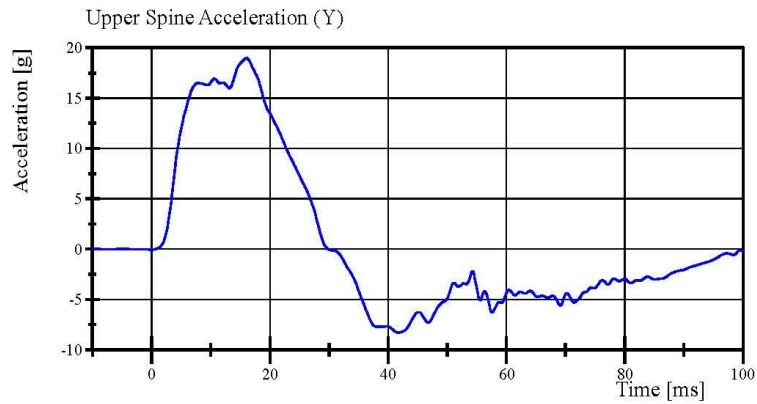
Test Date: 6/14/2024



Filter Class: CFC_180
Max: 0.2 g at -0.7 ms
Min: -15.5 g at 14.0 ms



Filter Class: CFC_600
Max: 32.7 mm at 18.5 ms
Min: -0.0 mm at 1.3 ms



Filter Class: CFC_180
Max: 19.0 g at 16.0 ms
Min: -8.3 g at 41.8 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 12:45:54 876



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 26-1
Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.688 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-34.4 g	Yes
Shoulder Displacement	31 - 40 mm	36.2 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.9 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	32.5 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	34.7 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	34.9 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	35.8 g	Yes

Test meets specifications.

Condition: Used

Comments:

Left Arm S/N: DP8451

Shoulder Rib S/N: 180-3355 DO9814

Upper Thorax Rib S/N: 180-3362 DP6492

Middle Thorax Rib S/N: 180-3362 DP6493

Lower Thorax Rib S/N: 180-3362 DP7664

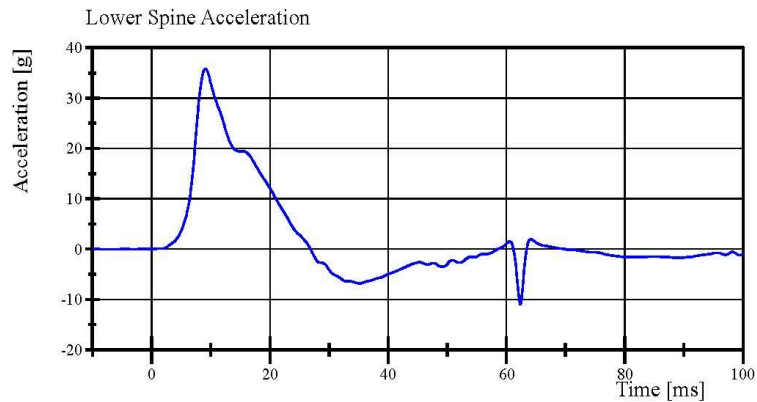
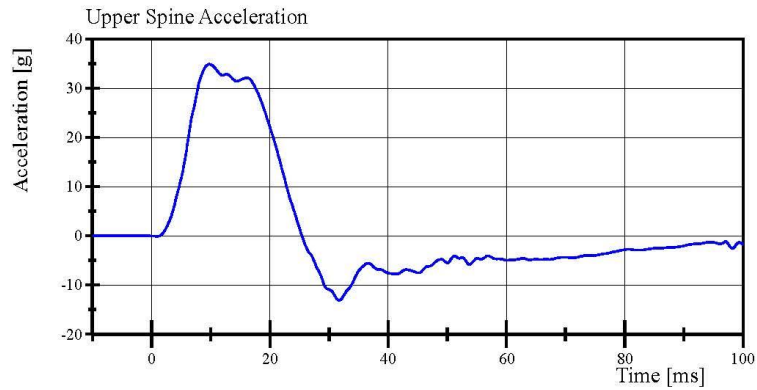
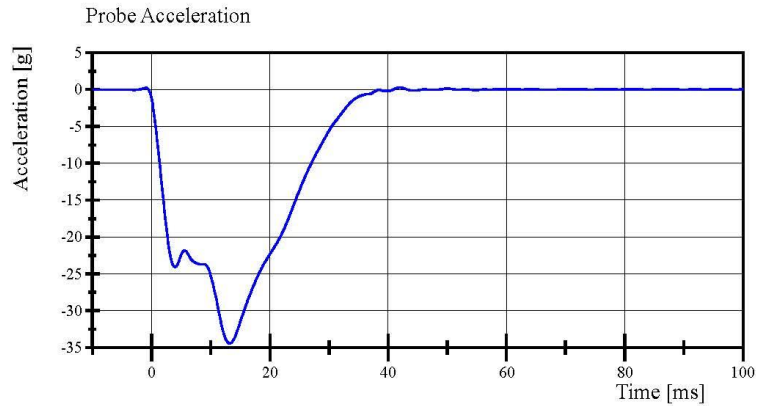
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.17.2024 14:21:50 648



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 26-1
Test Date: 6/14/2024



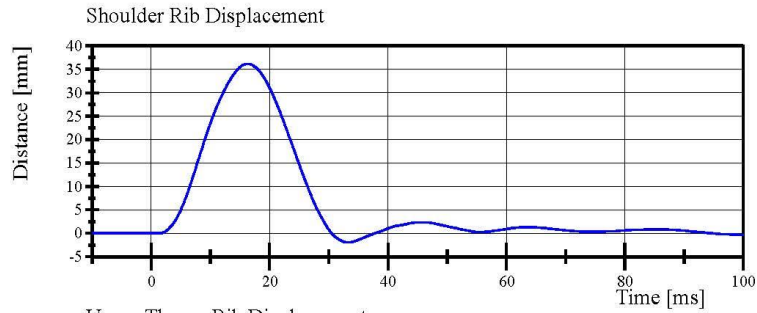
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.17.2024 14:22:25 648

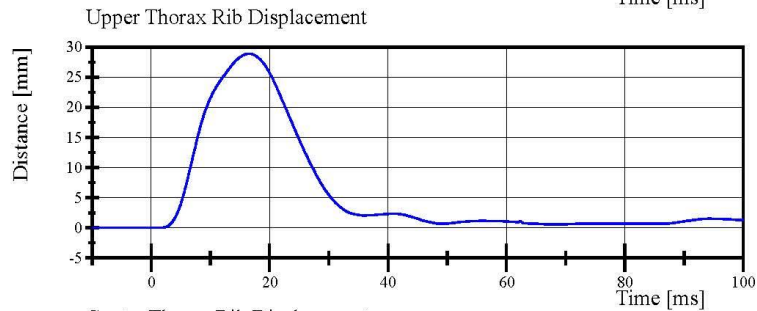


Transportation Research Center Inc.

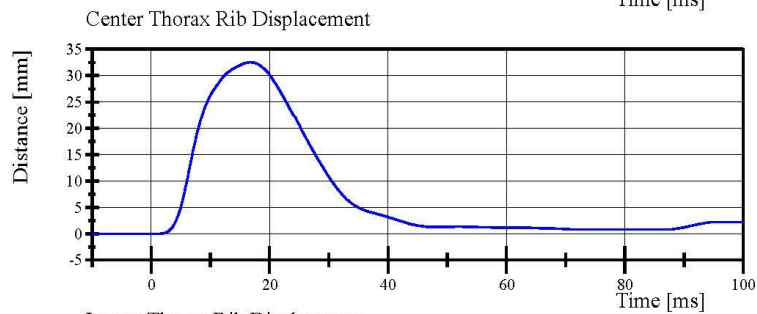
Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 26-1
Test Date: 6/14/2024



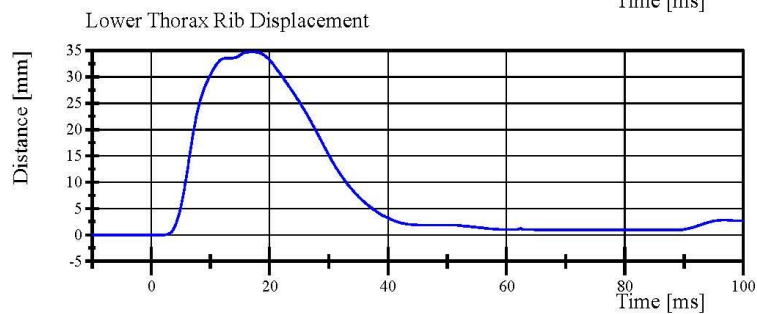
Filter Class: CFC_600
Max: 36.2 mm at 16.3 ms
Min: -1.9 mm at 33.2 ms



Filter Class: CFC_600
Max: 28.9 mm at 16.6 ms
Min: -0.0 mm at -7.0 ms



Filter Class: CFC_600
Max: 32.5 mm at 16.7 ms
Min: -0.0 mm at -7.0 ms



Filter Class: CFC_600
Max: 34.7 mm at 16.9 ms
Min: -0.0 mm at -7.6 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.17.2024 14:22:25 648



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 26-1
Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.327 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.1 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	38.9 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	42.6 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	38.4 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.7 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	10.5 g	Yes

Test meets specifications.

Condition: Used

Comments:

Upper Thorax Rib S/N: 180-3362 DP6492

Middle Thorax Rib S/N: 180-3362 DP6493

Lower Thorax Rib S/N: 180-3362 DP7664

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 13:08:08 883

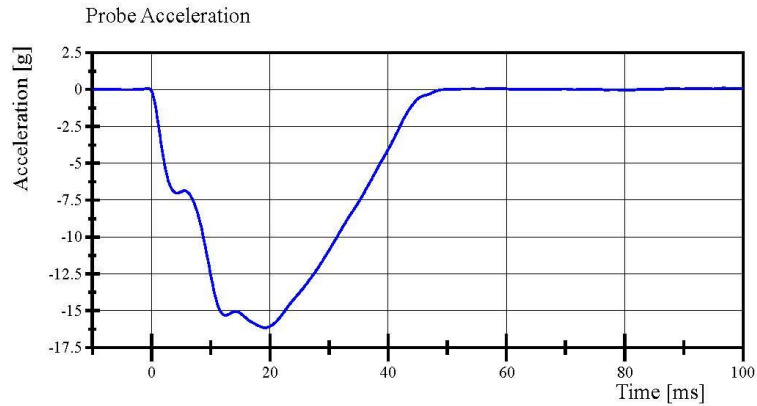


Transportation Research Center Inc.

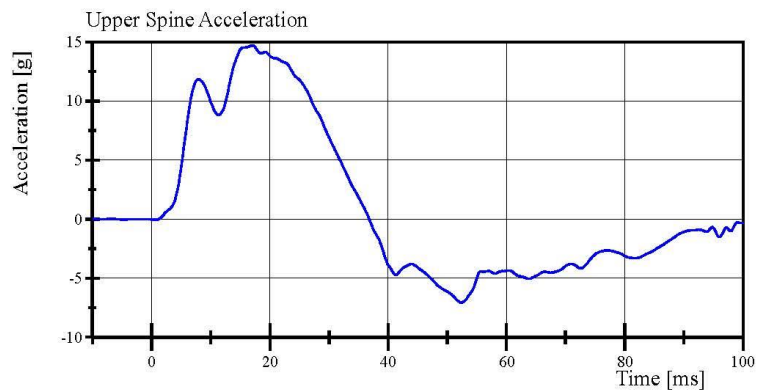
Left Lateral Thorax without Arm

SID IIs Serial No. DQ0570 Certification No. 26-1

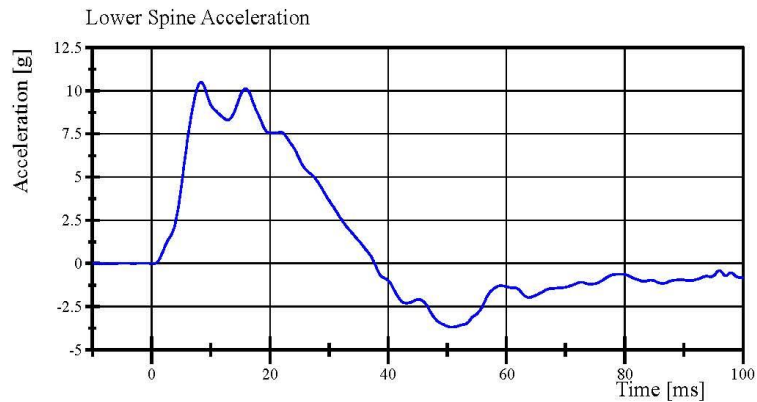
Test Date: 6/14/2024



Filter Class: CFC_180
Max: 0.1 g at 96.8 ms
Min: -16.1 g at 19.2 ms



Filter Class: CFC_180
Max: 14.7 g at 17.0 ms
Min: -7.1 g at 52.4 ms



Filter Class: CFC_180
Max: 10.5 g at 8.3 ms
Min: -3.7 g at 50.7 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 13:08:39 883

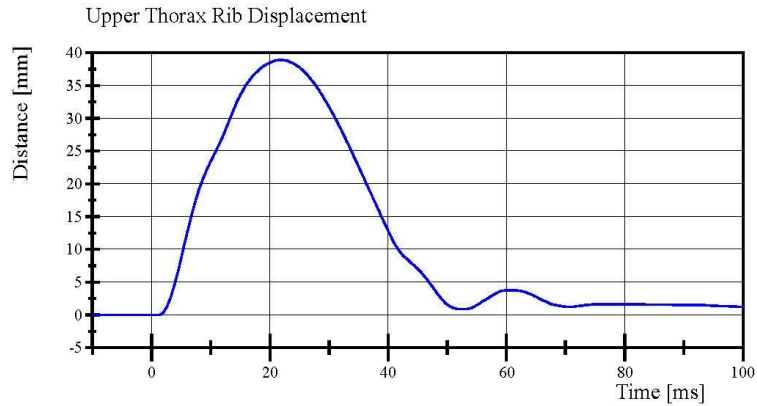


Transportation Research Center Inc.

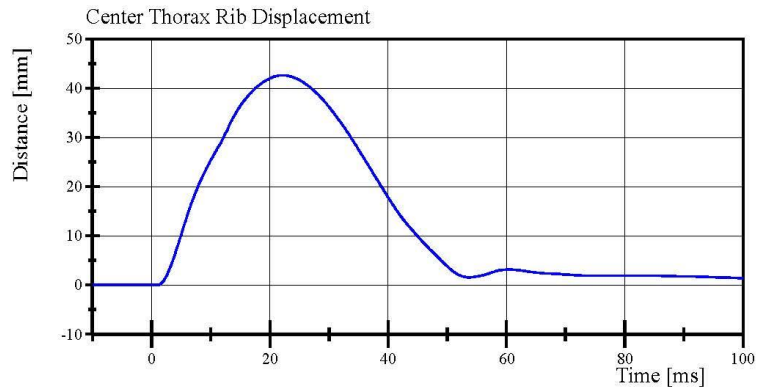
Left Lateral Thorax without Arm

SID IIs Serial No. DQ0570 Certification No. 26-1

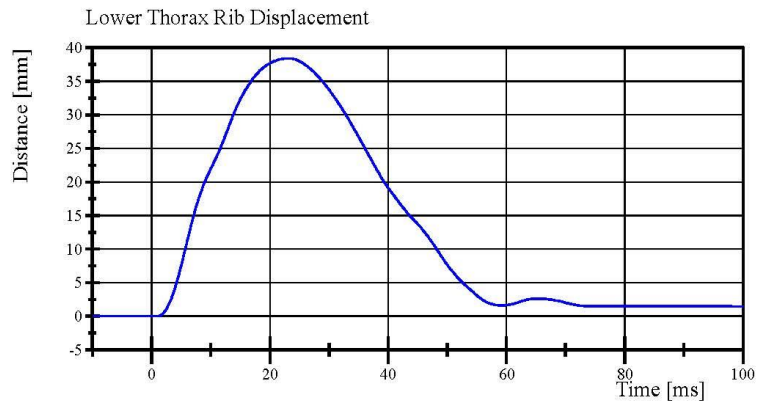
Test Date: 6/14/2024



Filter Class: CFC_600
Max: 38.9 mm at 21.8 ms
Min: -0.0 mm at 1.1 ms



Filter Class: CFC_600
Max: 42.6 mm at 22.1 ms
Min: -0.0 mm at -7.8 ms



Filter Class: CFC_600
Max: 38.4 mm at 23.1 ms
Min: -0.0 mm at -8.0 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 13:08:39 883



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DQ0570 Certification No. 26-1

Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.5 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	39.6 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	36.7 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	12.62 g	Yes

Test meets specifications.

Condition: Used

Comments:

Upper Abdominal Rib S/N: 180-3368 DP5142

Lower Abdominal Rib S/N: 180-3368 DP5143

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 12:56:10 700

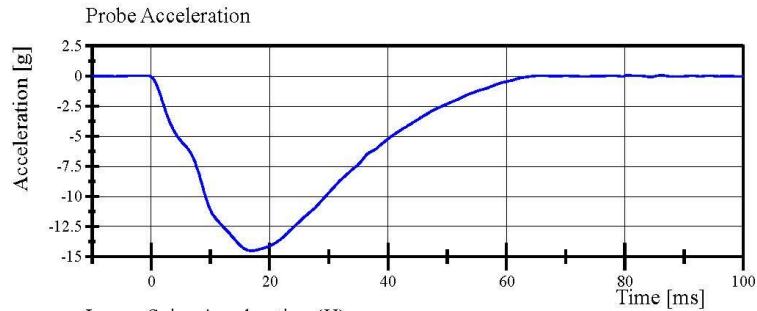


Transportation Research Center Inc.

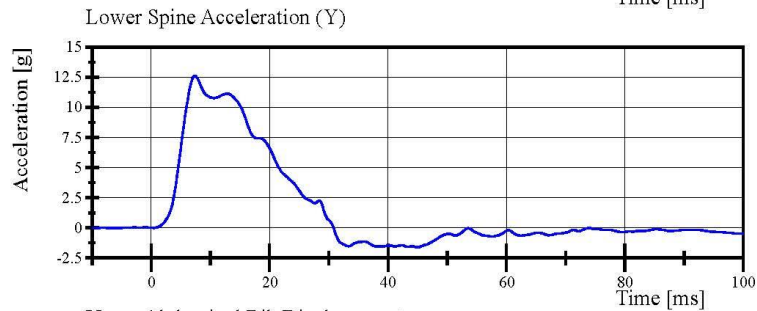
Left Lateral Abdomen

SID IIs Serial No. DQ0570 Certification No. 26-1

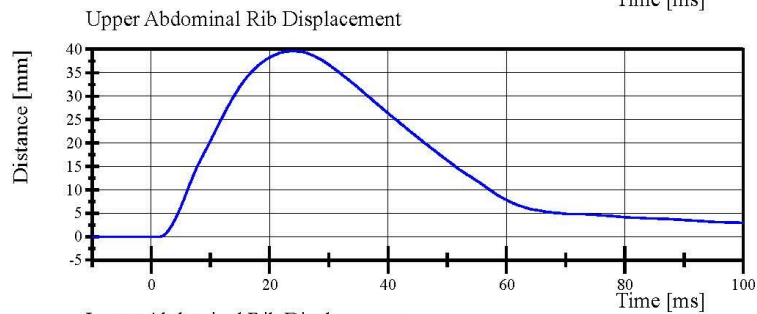
Test Date: 6/14/2024



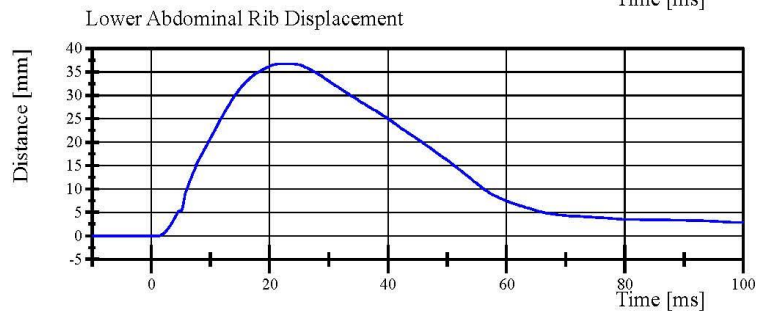
Filter Class: CFC_180
Max: 0.1 g at 80.6 ms
Min: -14.5 g at 17.0 ms



Filter Class: CFC_180
Max: 12.6 g at 7.4 ms
Min: -1.6 g at 45.0 ms



Filter Class: CFC_600
Max: 39.6 mm at 24.0 ms
Min: -0.0 mm at -8.8 ms



Filter Class: CFC_600
Max: 36.7 mm at 22.8 ms
Min: -0.0 mm at 1.1 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 12:56:36 700



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DQ0570 Certification No. 26-2

Test Date: 6/18/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.62 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-42.58 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	34.3 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,641.7 N	Yes

Test meets specifications.

Condition: Used

Comments:

Pelvis Skin S/N: 1173

Pelvis Plug Info:

Manufacturer: SACO

S/N: 14607

Cal Date: 20201221

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.18.2024 08:59:58.475

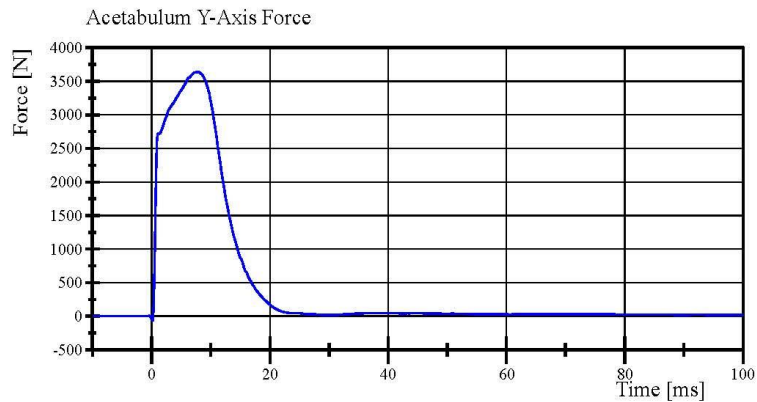
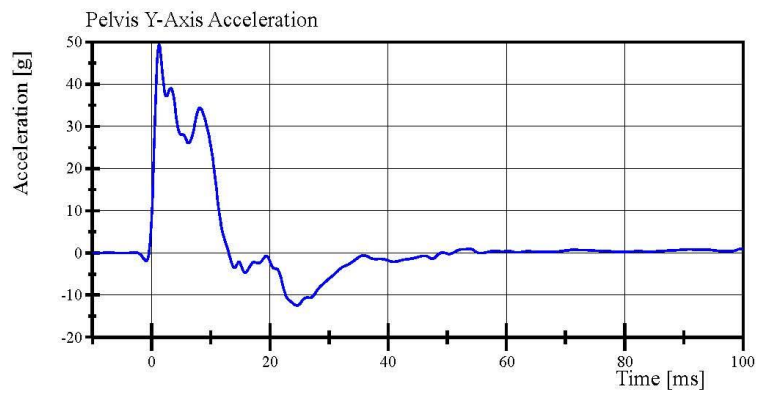
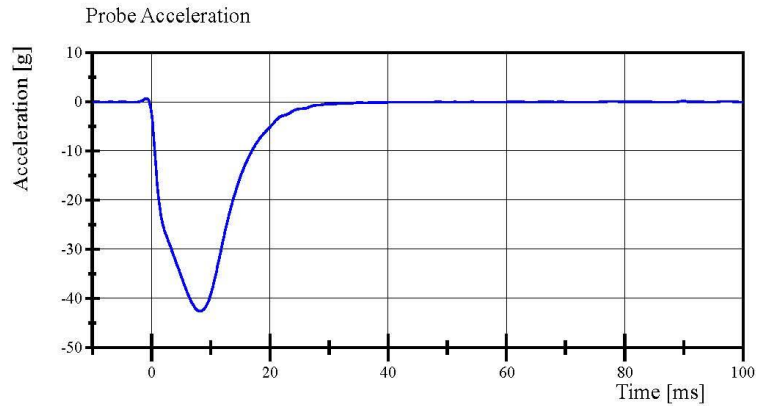


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DQ0570 Certification No. 26-2

Test Date: 6/18/2024



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.18.2024 09:00:40.475



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DQ0570 Certification No. 26-1

Test Date: 6/14/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-41.6 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	34.7 g	Yes
Iliac Force	4,100 - 5,100 N	4,794.2 N	Yes

Test meets specifications.

Condition: Used

Comments:

Pelvis Skin S/N: 1173

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 13:52:23 713

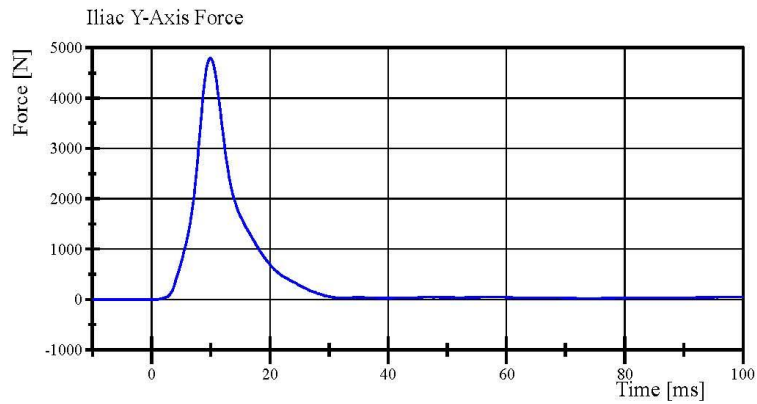
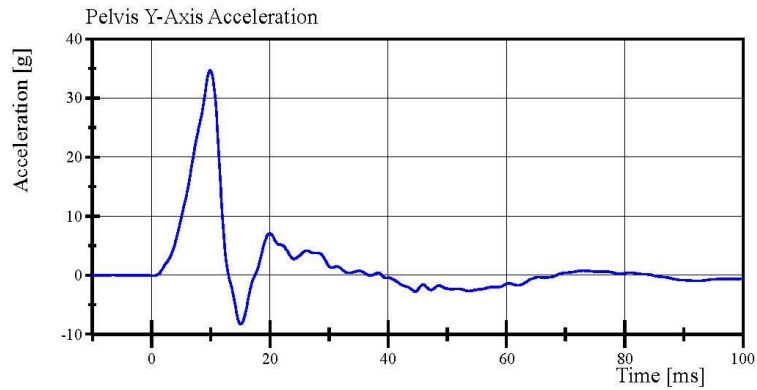
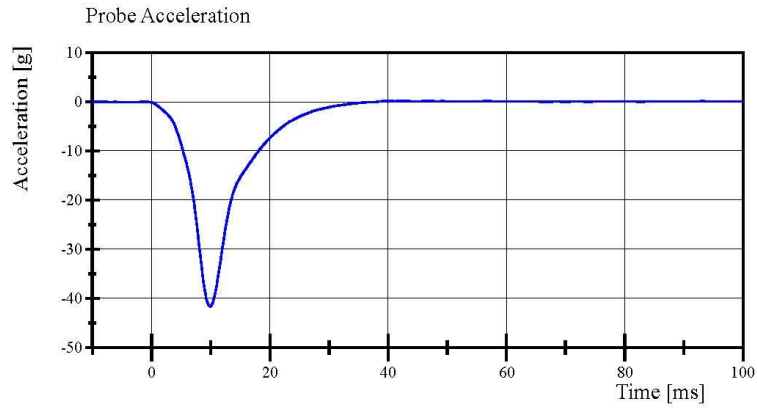


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DQ0570 Certification No. 26-1

Test Date: 6/14/2024



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.14.2024 13:53:02 713



Post-Test Calibration Sheets
Passenger S/N DQ0570

Transportation Research Center Inc.
SIDI's Dummy - Level D
External Dimensions
Serial No. DQ0570 Calibration No. 27

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	785	Yes
B	Shoulder Pivot Height	437.0 - 453.0	445	Yes
C	H-Point Height	79.0 - 89.0	83	Yes
D	H-Point from Seat Back	141.0 - 151.0	147	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	101	Yes
F	Thigh Clearance	119.0 - 135.0	130	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	184	Yes
J	Head Circumference	541.0 - 551.0	545	Yes
K	Buttock to Knee Length	514.0 - 540.0	533	Yes
L	Popliteal Height	343.0 - 369.0	353	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	400	Yes
N	Buttock Popliteal Length	416.0 - 442.0	427	Yes
O	Chest Depth without Jacket	195.0 - 211.0	200	Yes
P	Foot Length (right)	216.0 - 232.0	220	Yes
P	Foot Length (left)	216.0 - 232.0	220	Yes
Q	Hip Breadth	313.0 - 323.0	316	Yes
R	Arm Length	249.0 - 259.0	254	Yes
S	Knee Joint to seat Back	478.0 - 493.0	486	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	349	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	870	Yes
Z	Waist Circumference	761.0 - 791.0	780	Yes

Revised 9/29/2005



Report Number: DQ0570_S2H27

Page 29 of 31

Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DQ0570 Certification No. 27-2

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	136.0 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-2.3 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	< 15 %	1.25 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: DP8345

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:54:02 229

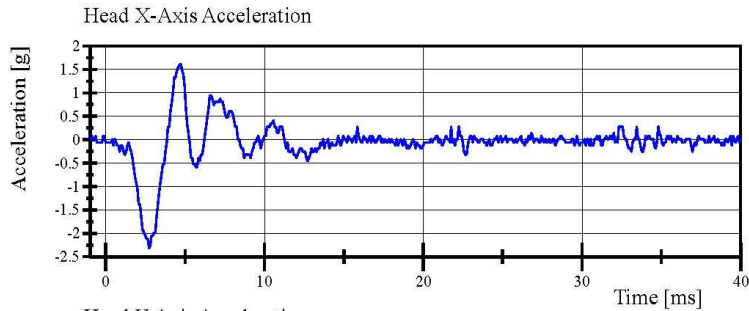


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DQ0570 Certification No. 27-2

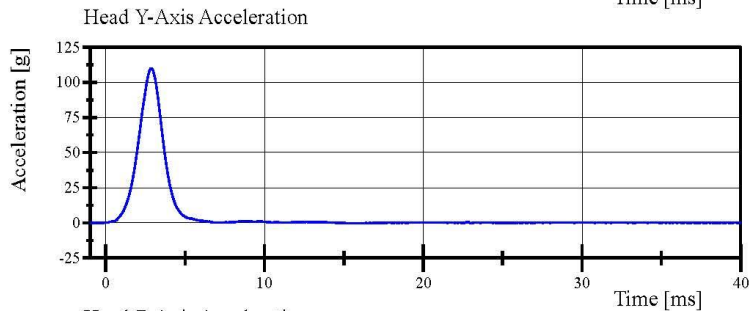
Test Date: 6/28/2024



Filter Class: CFC_1000

Max: 1.6 g at 4.6 ms

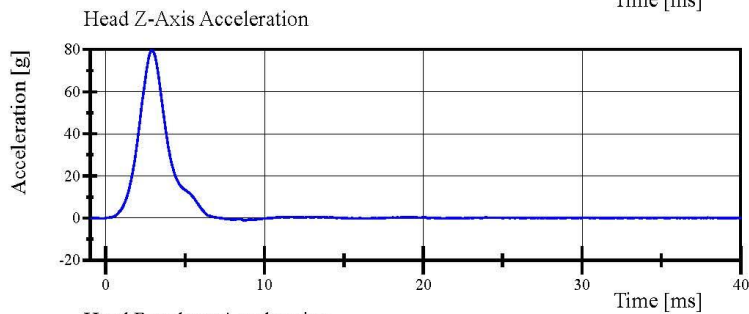
Min: -2.3 g at 2.7 ms



Filter Class: CFC_1000

Max: 110.1 g at 2.9 ms

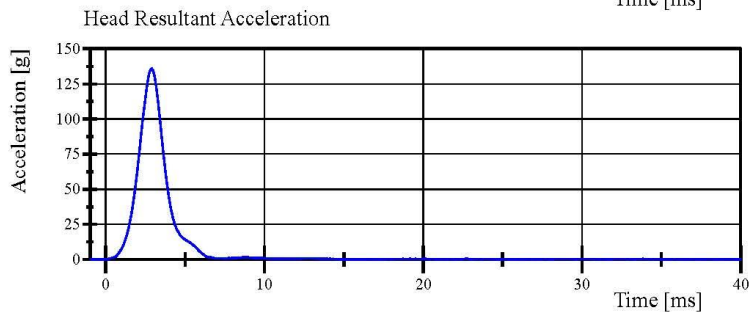
Min: -0.1 g at 15.2 ms



Filter Class: CFC_1000

Max: 79.7 g at 2.9 ms

Min: -1.1 g at 8.7 ms



Filter Class: CFC_1000

Max: 136.0 g at 2.9 ms

Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:56:35 229



Transportation Research Center Inc.

Left Lateral Neck

SID IIS Serial No. DQ0570 Certification No. 27-1

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.619 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.457 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.603 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.934 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.812 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.826 m/s	Yes
Maximum Headform Flexion			
Peak	(-71) - (-81) deg	-73.5 deg	Yes
Time of Peak	50 - 70 ms	57.7 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	40.8 N·m	Yes
Decay to 0 N·m	102 - 126 ms	108.0 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 717

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 09:47:16 752

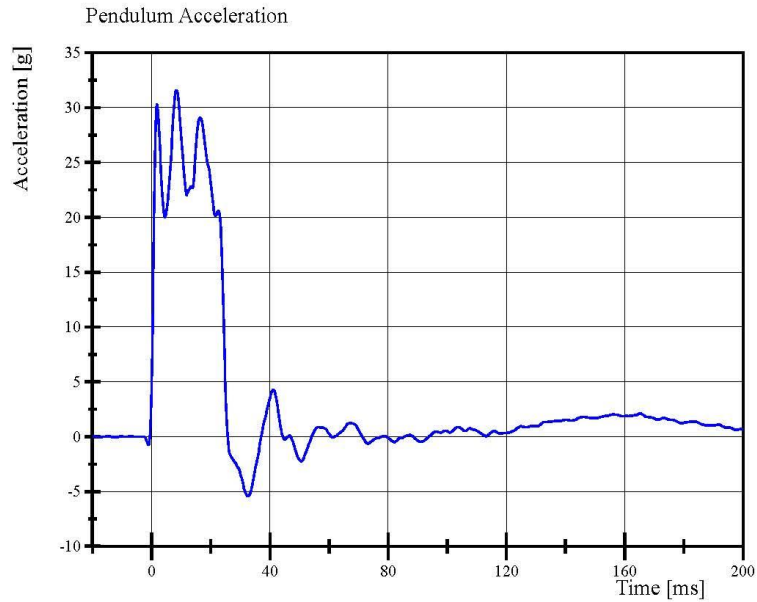


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DQ0570 Certification No. 27-1

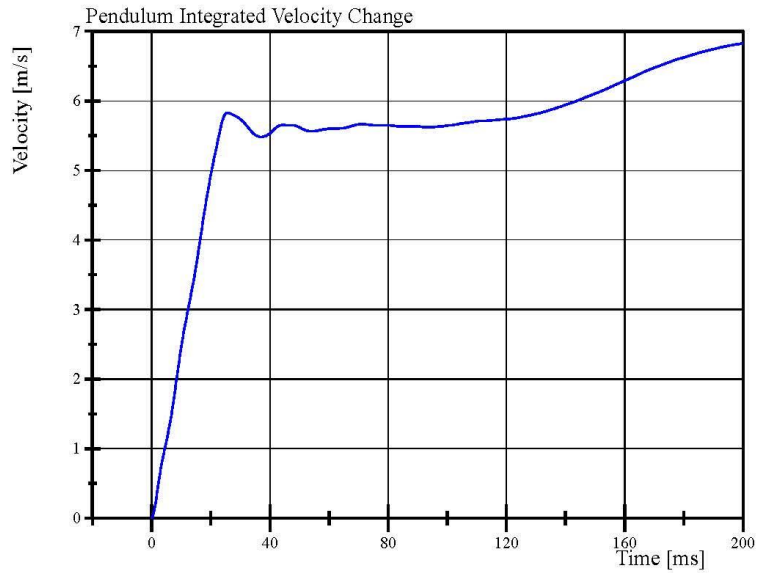
Test Date: 6/28/2024



Filter Class: CFC_180

Max: 31.6 g at 8.4 ms

Min: -5.4 g at 32.4 ms



Filter Class: CFC_180

Max: 6.8 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 09:48:00 752

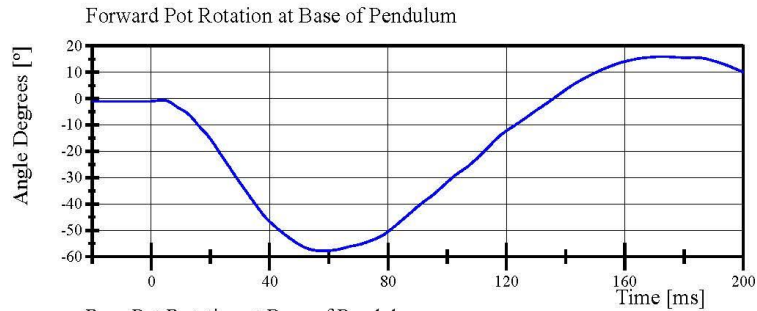


Transportation Research Center Inc.

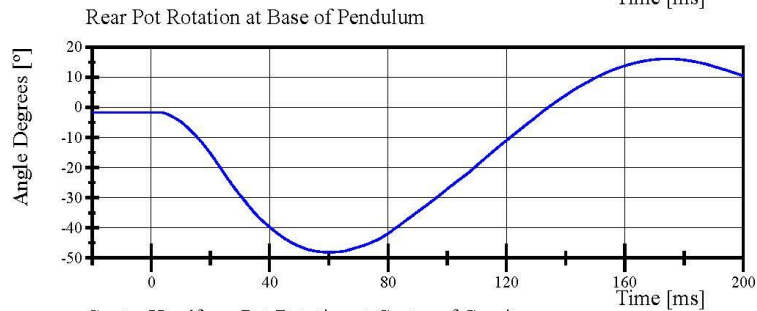
Left Lateral Neck

SID IIS Serial No. DQ0570 Certification No. 27-1

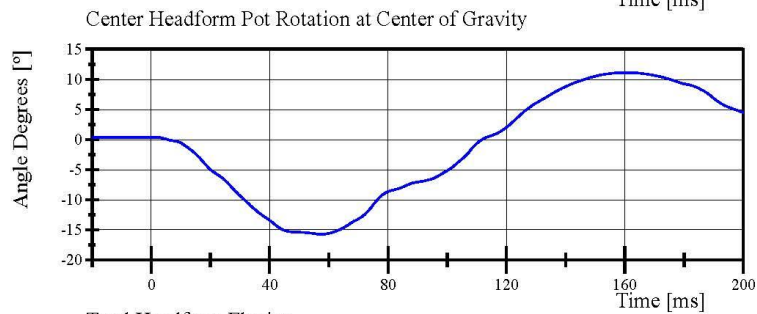
Test Date: 6/28/2024



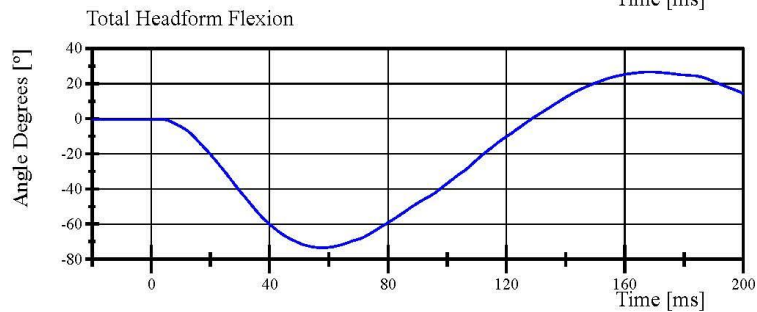
Filter Class: CFC_60
Max: 15.9 ° at 172.7 ms
Min: -57.8 ° at 57.9 ms



Filter Class: CFC_60
Max: 16.1 ° at 174.6 ms
Min: -48.1 ° at 60.0 ms



Filter Class: CFC_60
Max: 11.1 ° at 160.4 ms
Min: -15.7 ° at 57.4 ms



Filter Class: CFC_60
Max: 26.5 ° at 168.2 ms
Min: -73.5 ° at 57.7 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 09:48:00 752



Transportation Research Center Inc.

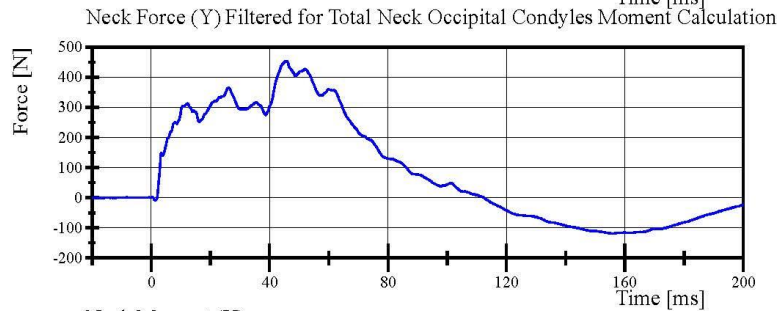
Left Lateral Neck

SID IIs Serial No. DQ0570 Certification No. 27-1

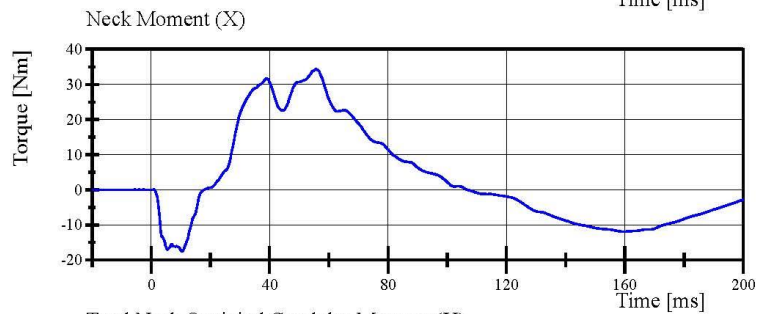
Test Date: 6/28/2024



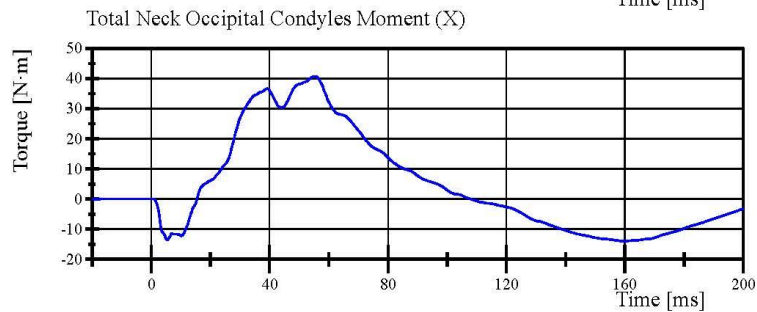
Filter Class: CFC_1000
Max: 454.9 N at 45.1 ms
Min: -119.5 N at 155.6 ms



Filter Class: CFC_600
Max: 453.5 N at 45.8 ms
Min: -119.1 N at 155.7 ms



Filter Class: CFC_600
Max: 34.4 Nm at 55.7 ms
Min: -17.5 Nm at 10.4 ms



Filter Class: Without_(Constar
Max: 40.8 N·m at 55.4 ms
Min: -14.0 N·m at 159.6 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 09:48:00 752



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DQ0570 Certification No. 27-1

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	65 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.2 g	Yes
Shoulder Displacement	28 - 37 mm	32.6 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	17.9 g	Yes

Test meets specifications.

Condition: Used

Comments:

Left Arm S/N: DP8451

Shoulder Rib S/N: DO9814

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 10:57:50 872

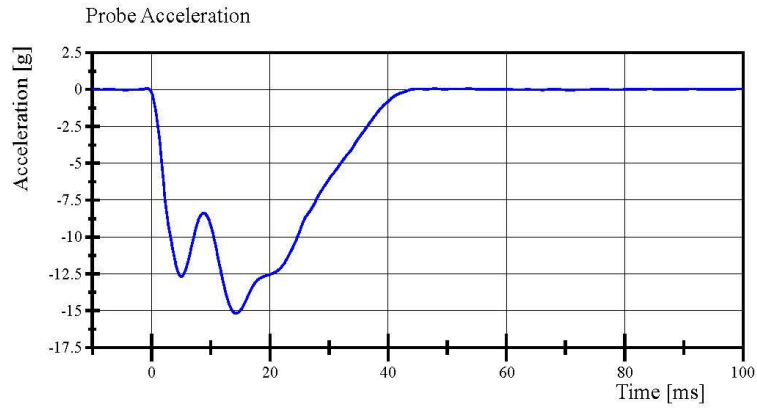


Transportation Research Center Inc.

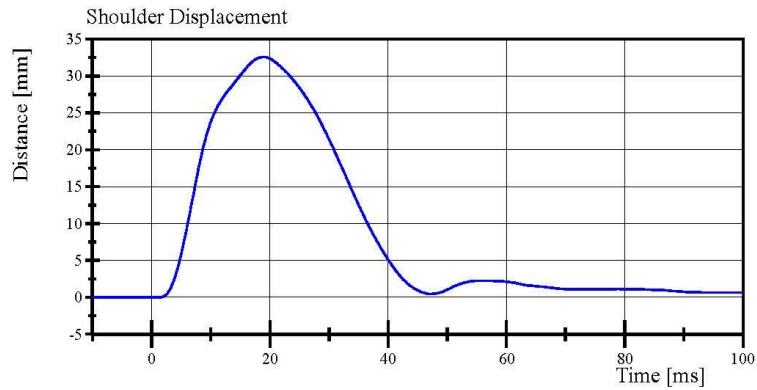
Left Lateral Shoulder

SID IIs Serial No. DQ0570 Certification No. 27-1

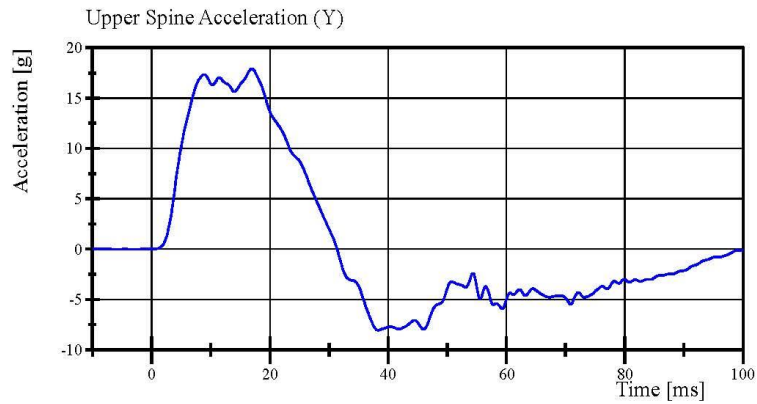
Test Date: 6/28/2024



Filter Class: CFC_180
Max: 0.1 g at -0.8 ms
Min: -15.2 g at 14.2 ms



Filter Class: CFC_600
Max: 32.6 mm at 19.0 ms
Min: -0.0 mm at 1.4 ms



Filter Class: CFC_180
Max: 17.9 g at 17.0 ms
Min: -8.1 g at 38.3 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 10:58:38 872



Transportation Research Center Inc.

Left Lateral Thorax with Arm

SID IIs Serial No. DQ0570 Certification No. 27-2

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	66 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.725 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-34.4 g	Yes
Shoulder Displacement	31 - 40 mm	34.7 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.7 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	33.4 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	36.7 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.0 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.7 g	Yes

Test meets specifications.

Condition: Used

Comments:

Left Arm S/N: DP8451

Shoulder Rib S/N: 180-3355 DO9814

Upper Thorax Rib S/N: 180-3362 DP6492

Middle Thorax Rib S/N: 180-3362 DP6493

Lower Thorax Rib S/N: 180-3362 DP7664

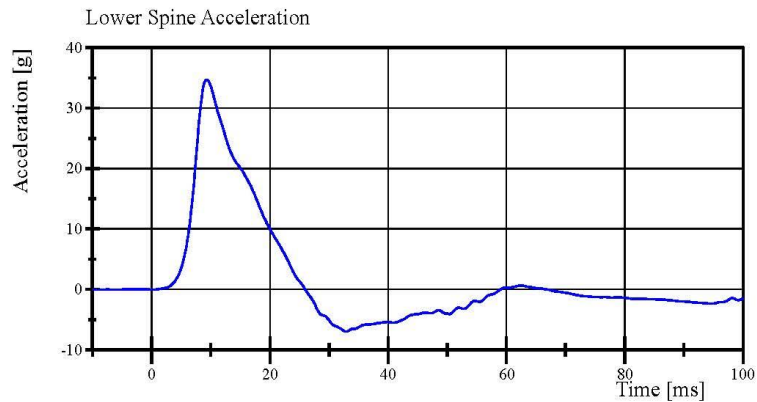
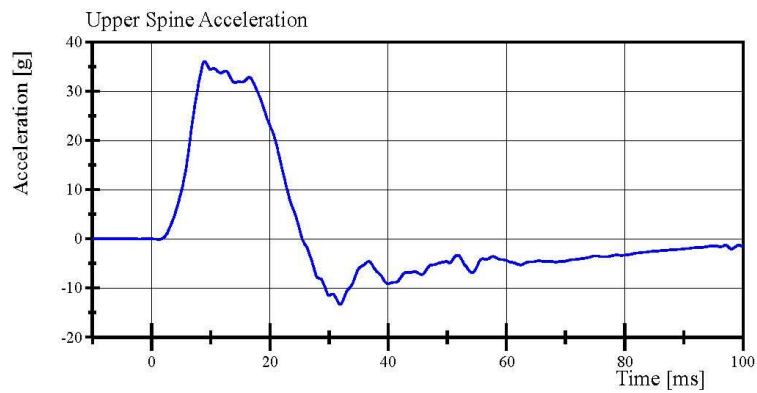
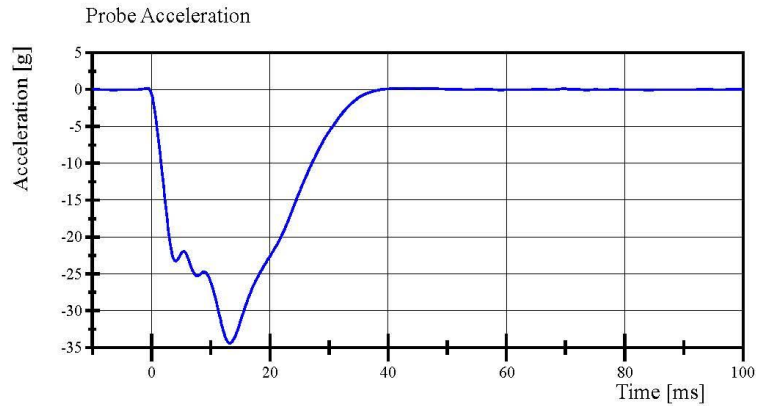
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 12:48:56 631



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 27-2
Test Date: 6/28/2024



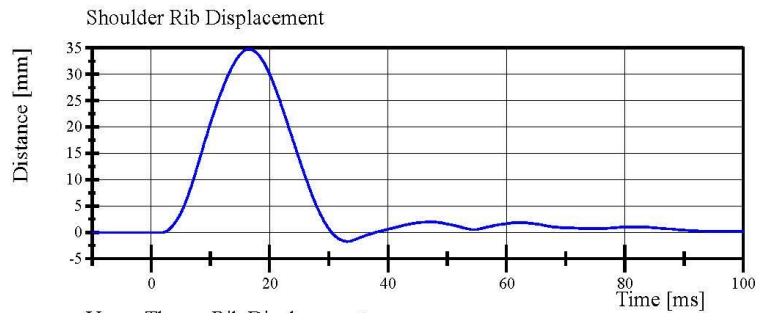
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 12:49:43 631

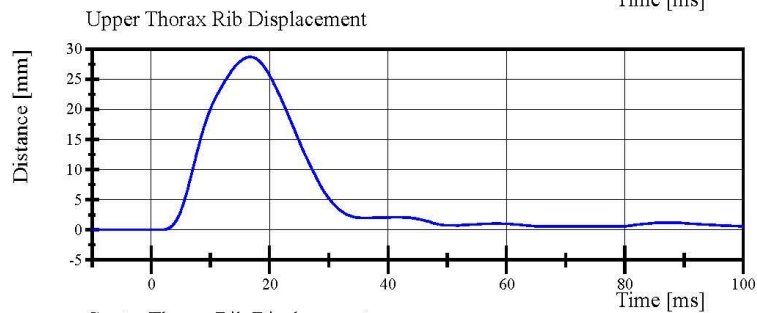


Transportation Research Center Inc.

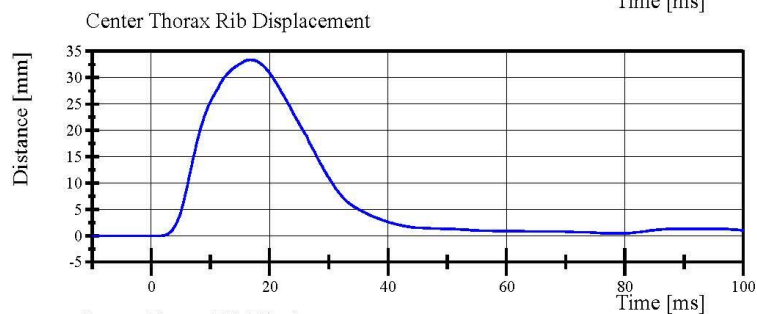
Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 27-2
Test Date: 6/28/2024



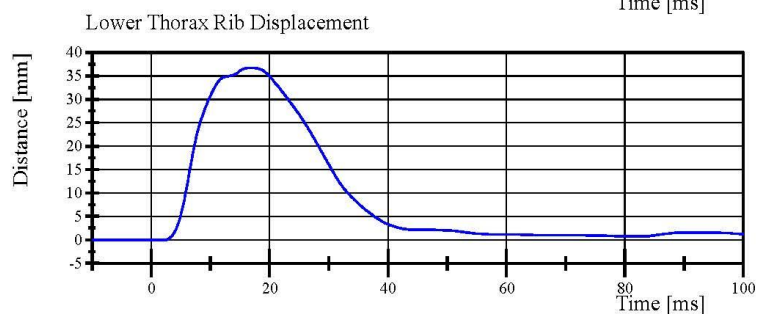
Filter Class: CFC_600
Max: 34.7 mm at 16.5 ms
Min: -1.7 mm at 33.1 ms



Filter Class: CFC_600
Max: 28.7 mm at 16.7 ms
Min: -0.0 mm at 2.0 ms



Filter Class: CFC_600
Max: 33.4 mm at 16.7 ms
Min: -0.0 mm at -9.8 ms



Filter Class: CFC_600
Max: 36.7 mm at 16.4 ms
Min: -0.0 mm at 2.4 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 12:49:44 631



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 27-1
Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.335 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.0 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	35.6 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	41.6 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	39.7 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.5 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	10.2 g	Yes

Test meets specifications.

Condition: Used

Comments:

Upper Thorax Rib S/N: 180-3362 DP6492

Middle Thorax Rib S/N: 180-3362 DP6493

Lower Thorax Rib S/N: 180-3362 DP7664

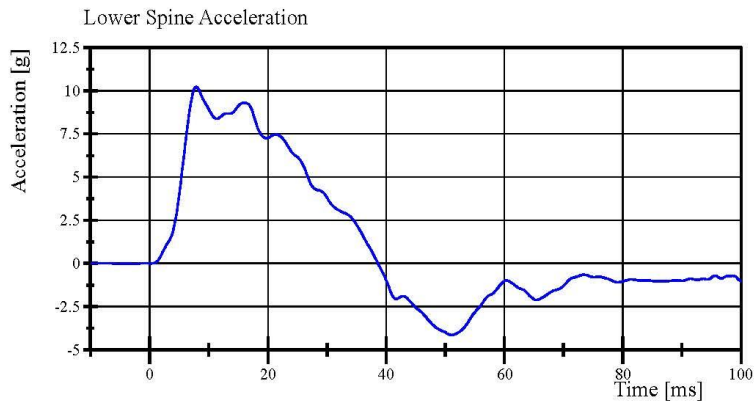
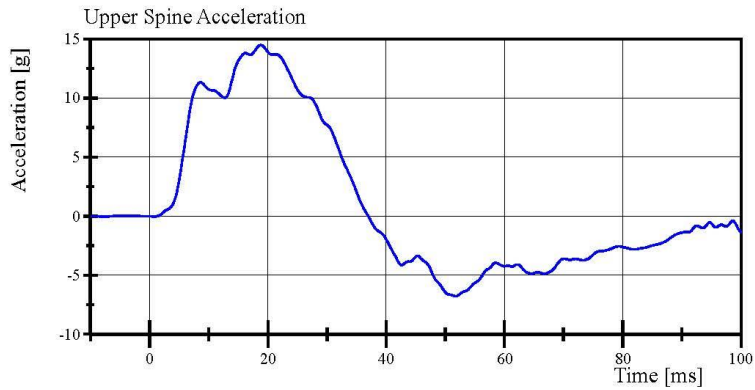
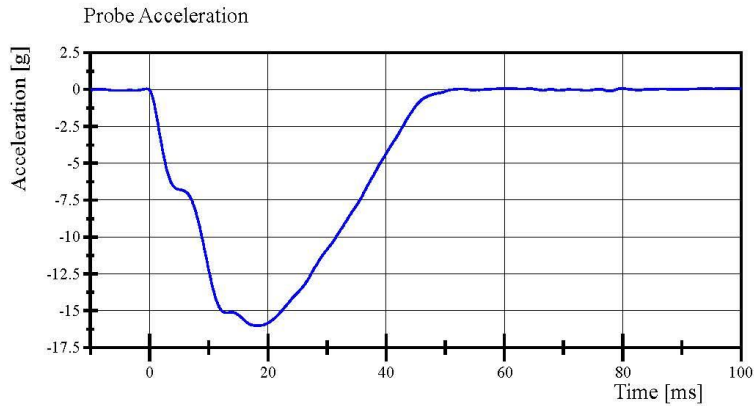
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:29:02 869



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 27-1
Test Date: 6/28/2024



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:30:01 869

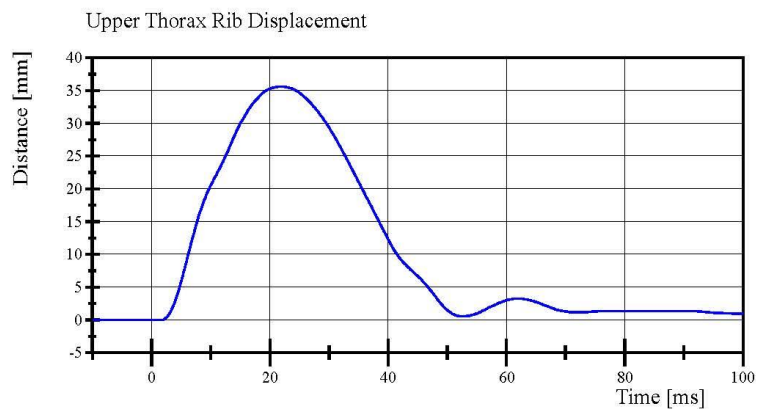


Transportation Research Center Inc.

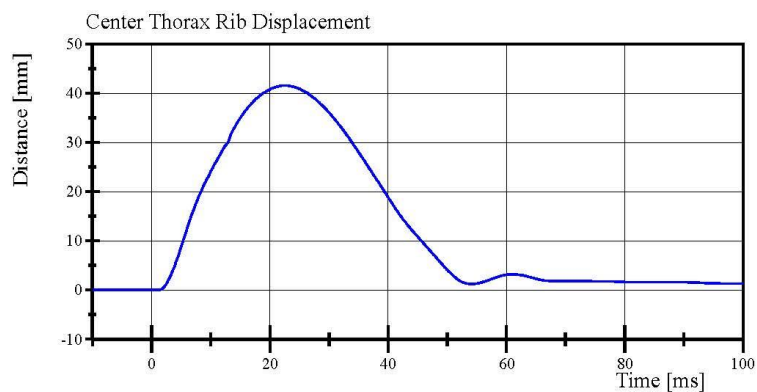
Left Lateral Thorax without Arm

SID IIs Serial No. DQ0570 Certification No. 27-1

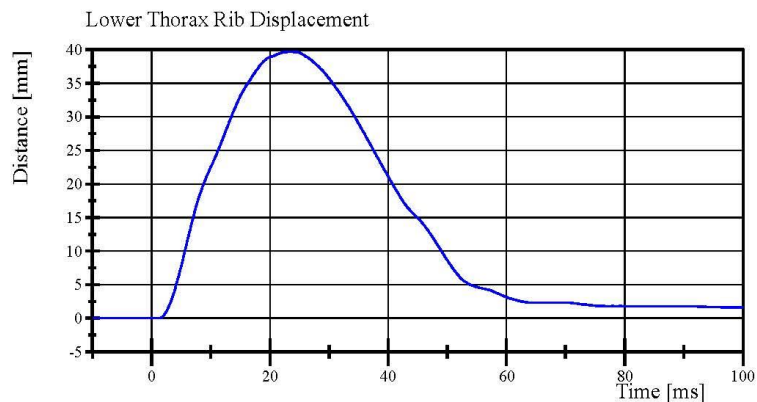
Test Date: 6/28/2024



Filter Class: CFC_600
Max: 35.6 mm at 22.0 ms
Min: -0.0 mm at 1.7 ms



Filter Class: CFC_600
Max: 41.6 mm at 22.4 ms
Min: -0.0 mm at 0.1 ms



Filter Class: CFC_600
Max: 39.7 mm at 23.4 ms
Min: -0.0 mm at 1.3 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:30:01 869



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DQ0570 Certification No. 27-1

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.6 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	38.2 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	38.4 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	12.12 g	Yes

Test meets specifications.

Condition: Used

Comments:

Left Arm S/N: DP8451

Shoulder Rib S/N: DO9814

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:12:56 700

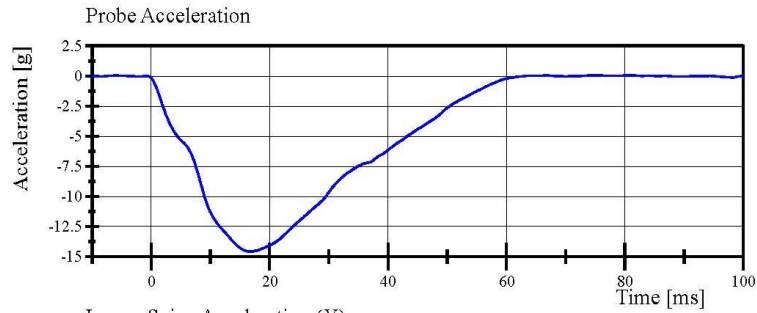


Transportation Research Center Inc.

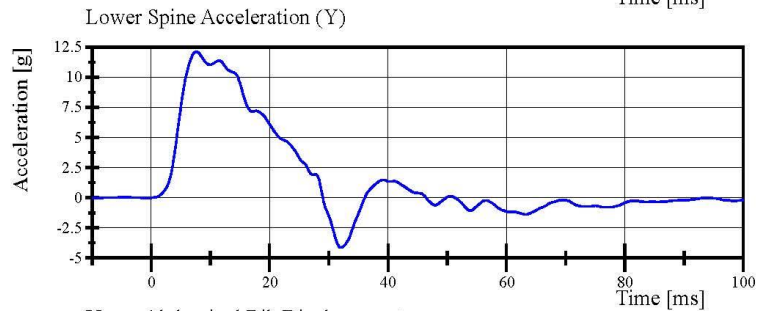
Left Lateral Abdomen

SID IIs Serial No. DQ0570 Certification No. 27-1

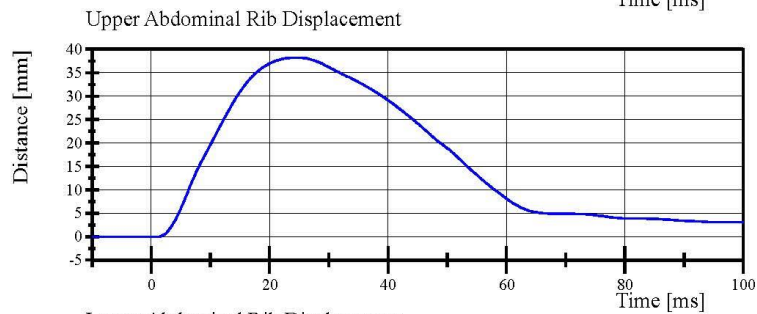
Test Date: 6/28/2024



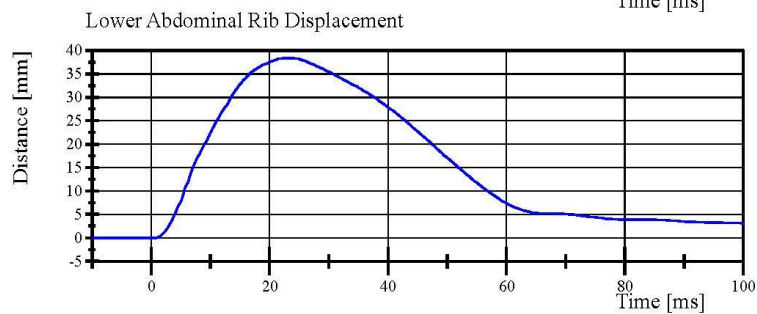
Filter Class: CFC_180
Max: 0.1 g at 74.4 ms
Min: -14.6 g at 16.7 ms



Filter Class: CFC_180
Max: 12.1 g at 7.6 ms
Min: -4.1 g at 32.1 ms



Filter Class: CFC_600
Max: 38.2 mm at 24.7 ms
Min: -0.0 mm at 1.2 ms



Filter Class: CFC_600
Max: 38.4 mm at 23.0 ms
Min: -0.0 mm at 0.6 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 11:13:25 700



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIS Serial No. DQ0570 Certification No. 27-2

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.64 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-42.47 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	34.7 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,737.6 N	Yes

Test meets specifications.

Condition: Used

Comments:

Pelvis Skin S/N: 1173

Pelvis Plug Info:

Manufacturer: SACO

S/N: 14634

Cal Date: 20201221

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 15:16:30 467

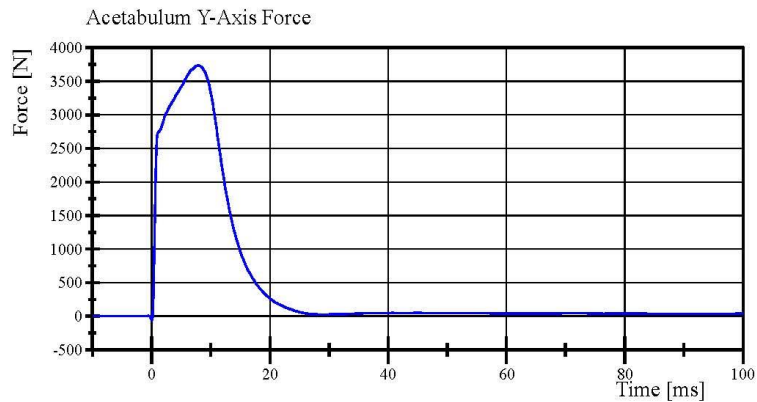
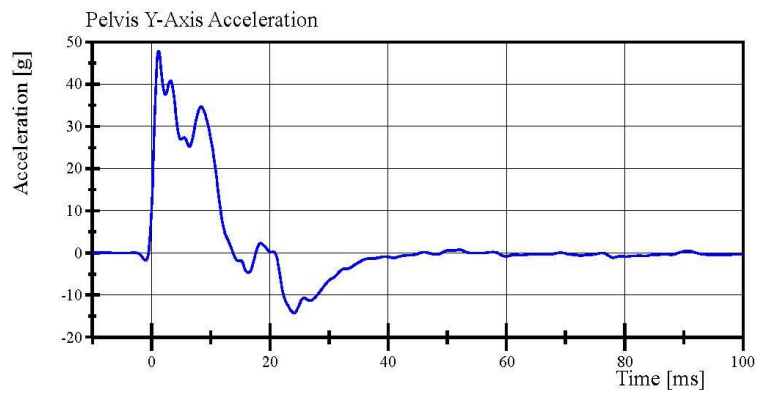
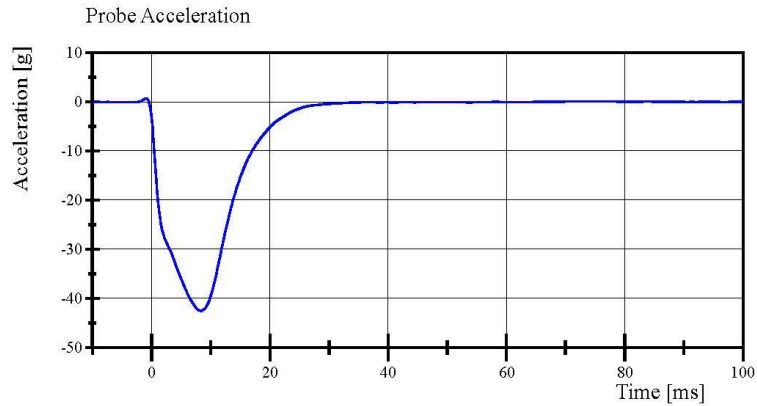


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DQ0570 Certification No. 27-2

Test Date: 6/28/2024



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 15:17:37 467



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DQ0570 Certification No. 27-1

Test Date: 6/28/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-40.6 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	35.7 g	Yes
Iliac Force	4,100 - 5,100 N	4,748.7 N	Yes

Test meets specifications.

Condition: Used

Comments:

Pelvis Skin S/N: 1173

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 10:34:52 701

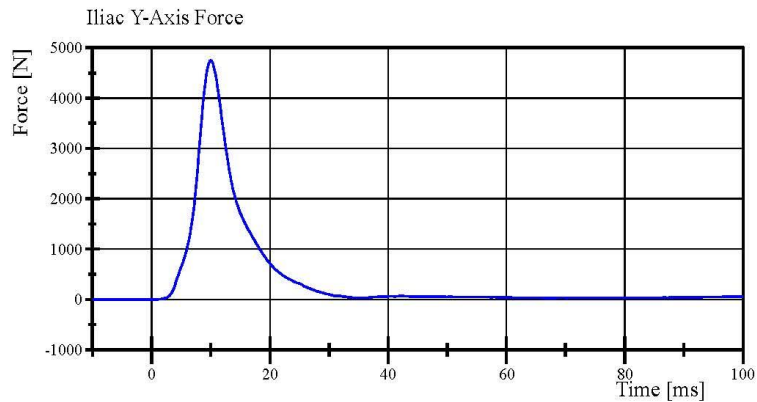
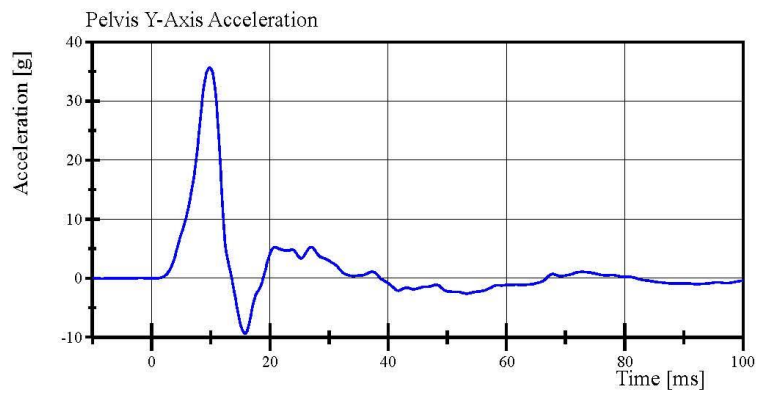
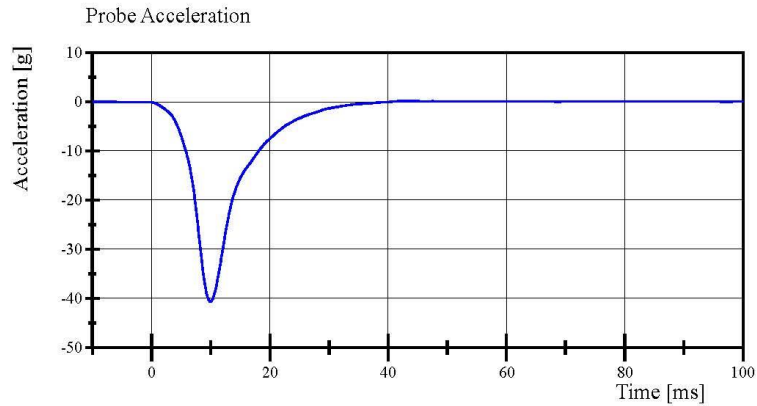


Transportation Research Center Inc.

Left Lateral Iliac

SID IIS Serial No. DQ0570 Certification No. 27-1

Test Date: 6/28/2024



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

06.28.2024 10:35:22 701



APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N F030		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers	X		T14583	Endevco	01-May-2024
	Y		T13068	Endevco	01-May-2024
	Z		T14569	Endevco	01-May-2024
Redundant Head Accelerometers	X		T17635	Endevco	01-May-2024
	Y		T14567	Endevco	01-May-2024
	Z		T14586	Endevco	01-May-2024
Thoracic Rib Displacement Potentiometers	Upper	Y	111	Honeywell	01-May-2024
	Middle	Y	174	Honeywell	01-May-2024
	Lower	Y	0913	Honeywell	01-May-2024
Abdomen Load Cells	Front	Y	1441	Denton	01-May-2024
	Middle	Y	1436	Denton	01-May-2024
	Rear	Y	1437	Denton	01-May-2024
Lower Spine Accelerometers (T12)	X		T16354	Endevco	01-May-2024
	Y		T17602	Endevco	01-May-2024
	Z		T17625	Endevco	01-May-2024
Acetabulum Load Cell		Y	N/A	N/A	N/A
Pubic Symphysis Load Cell		Y	465-FY	Denton	01-May-2024

TABLE 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N DQ0570			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers				X	T18335	Endevco	29-Apr-2024
				Y	T24497	Endevco	29-Apr-2024
				Z	T18333	Endevco	29-Apr-2024
Redundant Head Accelerometers				X	T25601	Endevco	29-Apr-2024
				Y	T25566	Endevco	29-Apr-2024
				Z	T20557	Endevco	29-Apr-2024
Displacement Potentiometers	Shoulder			N/A	N/A	N/A	N/A
	Thoracic Rib	Upper	Y	007	Servo	1-May-2024	
		Middle	Y	037	Servo	1-May-2024	
		Lower	Y	048	Servo	30-Apr-2024	
	Abdominal Rib	Upper	Y	1295	Servo	1-May-2024	
		Lower	Y	1136	Servo	1-May-2024	
Lower Spine Accelerometers (T12)				X	T14559	Endevco	29-Apr-2024
				Y	T13682	Endevco	29-Apr-2024
				Z	T18476	Endevco	29-Apr-2024
Acetabulum Load Cell				Y	DK7483S-FY	FTSS	29-Apr-2024
Iliac Wing Load Cell				Y	287-FY	Denton	30-Apr-2024
Pelvis Plug (struck side)					16460	SACO	21-Dec-2020
Pelvis Plug (non-struck side)					14642	SACO	21-Dec-2020

TABLE 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	A377448	Measurement Specialties	10-Jun-2024
	Vehicle Center of Gravity	Y	A378302	Measurement Specialties	23-May-2024
	Vehicle Center of Gravity	Z	A378310	Measurement Specialties	10-Jun-2024
2	Right Sill at Front Seat	X	A385706	Measurement Specialties	23-May-2024
	Right Sill at Front Seat	Y	A367452	Measurement Specialties	10-Jun-2024
	Right Sill at Front Seat	Z	A349788	Measurement Specialties	22-Mar-2024
3	Right Sill at Rear Seat	X	A349806	Measurement Specialties	22-Mar-2024
	Right Sill at Rear Seat	Y	A378298	Measurement Specialties	23-May-2024
	Right Sill at Rear Seat	Z	A349801	Measurement Specialties	10-Jun-2024
4	Left Sill at Front Door	Y	A385752	Measurement Specialties	30-Apr-2024
5	Left Sill at Rear Door	Y	A385740	Measurement Specialties	30-Apr-2024
6	Left A-Post Lower	Y	A349794	Measurement Specialties	10-Jun-2024
7	Left A-Post Middle	Y	A400111	Measurement Specialties	10-Jun-2024
8	Left B-Post Lower	Y	A349898	Measurement Specialties	30-Apr-2024
9	B-Post Middle	Y	A385743	Measurement Specialties	30-Apr-2024
10	Front Seat Track	Y	A227171	Measurement Specialties	10-Jun-2024
11	Rear Seat Track or Structure	Y	A378300	Measurement Specialties	30-Apr-2024
12	Right Rear Occupant Compartment	Y	A385745	Measurement Specialties	30-Apr-2024
13	Engine Block	X	A349877	Measurement Specialties	21-Mar-2024
	Engine Block	Y	A349879	Measurement Specialties	6-Jun-2024
14	Rear Floorpan Above Axle	X	A400123	Measurement Specialties	10-Jun-2024
	Rear Floorpan Above Axle	Y	A400074	Measurement Specialties	6-Jun-2024
	Rear Floorpan Above Axle	Z	A378352	Measurement Specialties	10-Jun-2024

TABLE 4 – MDB Instrumentation

MDB Instrumentation		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A386333	Measurement Specialties	30-Apr-2024
MDB Center of Gravity	Y	A378288	Measurement Specialties	30-Apr-2024
MDB Center of Gravity	Z	A385748	Measurement Specialties	30-Apr-2024
Left Frame Rail at Rear Axle Centerline	X	A385742	Measurement Specialties	30-Apr-2024
Left Frame Rail at Rear Axle Centerline	Y	A386414	Measurement Specialties	30-Apr-2024