

Final Report Number: NCAP-TRC-24-004

**New Car Assessment Program (NCAP)
Frontal Barrier Impact Test**

**GM KOREA COMPANY
2024 Chevrolet Trax SUV
NHTSA Number: M20240103**

**PREPARED BY:
Transportation Research Center Inc.
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Report Date: December 5, 2024

FINAL REPORT

**Prepared For:
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
1200 New Jersey Ave, SE
Washington, DC 20590**

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Prepared By: ILO Project Operations Group

Approved By: John Shultz

Approval Date: December 5, 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 _____

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16. Abstract A 56.0 km/h NCAP Frontal Impact Test was conducted on a 2024 Chevrolet Trax SUV, in accordance with the specifications of the Office of Crashworthiness Standards Laboratory Procedure for NCAP Full Frontal Rigid Barrier Impact Testing. The test was conducted at the Transportation Research Center Inc. in East Liberty, Ohio on June 25, 2024. The impact velocity was 56.62 km/h, and the ambient temperature at the barrier face at the time of impact was 21.6° C. The target vehicle post-test maximum crush was 460 millimeters at vehicle C3. The test vehicle's performance is as follows:																																																																												
<table border="1"> <thead> <tr> <th></th><th colspan="3">Driver ATD</th><th colspan="3">Passenger ATD</th></tr> <tr> <th>Measurement Description</th><th>Units</th><th>Threshold</th><th>Result</th><th>Units</th><th>Threshold</th><th>Result</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td><td>NA</td><td>700</td><td>182.760</td><td>NA</td><td>700</td><td>280.660</td></tr> <tr> <td>Maximum Chest Compression</td><td>mm</td><td>63</td><td>-24.010</td><td>mm</td><td>52</td><td>-20.430</td></tr> <tr> <td>3ms Chest Clip</td><td>Gs</td><td>60</td><td>50.800</td><td>Gs</td><td>60</td><td>44.560</td></tr> <tr> <td>Nij</td><td>NA</td><td>1</td><td>0.288</td><td>NA</td><td>1</td><td>0.397</td></tr> <tr> <td>Neck Tension</td><td>Newtons</td><td>4170</td><td>932.040</td><td>Newtons</td><td>2620</td><td>980.490</td></tr> <tr> <td>Neck Compression</td><td>Newtons</td><td>4000</td><td>-89.070</td><td>Newtons</td><td>2520</td><td>-430.480</td></tr> <tr> <td>Left Femur Force</td><td>Newtons</td><td>10008</td><td>-412.480</td><td>Newtons</td><td>6805</td><td>-870.040</td></tr> <tr> <td>Right Femur Force</td><td>Newtons</td><td>10008</td><td>-418.660</td><td>Newtons</td><td>6805</td><td>-1055.620</td></tr> </tbody> </table>								Driver ATD			Passenger ATD			Measurement Description	Units	Threshold	Result	Units	Threshold	Result	Head Injury Criteria (HIC ₁₅)	NA	700	182.760	NA	700	280.660	Maximum Chest Compression	mm	63	-24.010	mm	52	-20.430	3ms Chest Clip	Gs	60	50.800	Gs	60	44.560	Nij	NA	1	0.288	NA	1	0.397	Neck Tension	Newtons	4170	932.040	Newtons	2620	980.490	Neck Compression	Newtons	4000	-89.070	Newtons	2520	-430.480	Left Femur Force	Newtons	10008	-412.480	Newtons	6805	-870.040	Right Femur Force	Newtons	10008	-418.660	Newtons	6805	-1055.620
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SECTION 1: PURPOSE AND SUMMARY OF THE TEST

PURPOSE

This 56 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. 693JJ919D000007. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

This 56 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Test Procedure or NCAP Full Frontal Rigid Barrier Impact Testing dated May 2018.

SUMMARY

A load cell barrier consisting of 288 load cells was impacted by a 2024 Chevrolet Trax SUV at a velocity of 56.62 km/h. The test was performed at Transportation Research Center, Inc. on June 25, 2024. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

One real-time camera and 16 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

One Part 572E 50th percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O 5th percentile female ATD was placed in the right-front passenger position according to dummy placement instructions specified in the Laboratory Procedure for NCAP Full Frontal Rigid Barrier Impact Testing.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck transducers, femur load cells, and lower leg instrumentation.

The driver (position 1) ATD (Serial No. 037), and the right-front passenger (position 2) ATD (Serial No. DH1659) were qualified prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 102 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

There was 100.0 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage (or electrolyte spillage) after the event or during any phase of the static rollover.

The maximum static crush of the vehicle was 460 mm and both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: front airbag, headrest, and knee bolster. The passenger's visible contact points were as follows: front airbag, headrest, and knee bolster.

The occupant data is summarized below:

ATD Position	HIC ₁₅	Nij	Neck Tension (N)	Neck Compression (N)	3 ms Chest Clip (Gs)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (50 th Male)	182.760	0.288	932.040	-89.070	50.800	-24.010	-412.480	-418.660
Passenger (5 th Female)	280.660	0.397	980.490	-430.480	44.560	-20.430	-870.040	-1055.620

TEST COMMENTS:

Driver Shoulder Belt Force: CF 10.0 ms

Engine Bottom X: QD throughout

SECTION 2: OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

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

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
 Test Date: 6/25/2024

TEST VEHICLE INFORMATION

NHTSA No.	M20240103
Model Year	2024
Make	Chevrolet
Model	Trax
Body Style	MPV
VIN	KL77LFE21RC176468
Body Color	Sterling Gray Metallic
Odometer Reading (km/mi)	6 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
Automatic Door Locks (ADLs)	Yes

TEST VEHICLE OPTIONS

Traction Control System (TCS)	Yes
Power Steering	Yes
Power Window Auto-Reverse	No
Driver Frontal 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
Front Pass. Frontal Airbag	Yes
Front Pass. Curtain Airbag	Yes
Front Pass. Head/Torso Airbag	No
Front Pass. Torso Airbag	No
Front Pass. Torso/Pelvis Airbag	Yes
Front Pass. Pelvis Airbag	No
Front Pass. Knee Airbag	No
Driver Pretensioner	Yes
Driver Load Limiter	Yes
Front Pass. Pretensioner	Yes
Front Pass. Load Limiter	Yes
Other:	No

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

No

DATA FROM CERTIFICATION LABEL

Manufactured by	GM KOREA COMPANY	GVWR (kg)	1880 (4145 LB)
Date of Manufacture	11/23	GAWR Front (kg)	1060 (2336 LB)
		GAWR Rear (kg)	1060 (2336 LB)

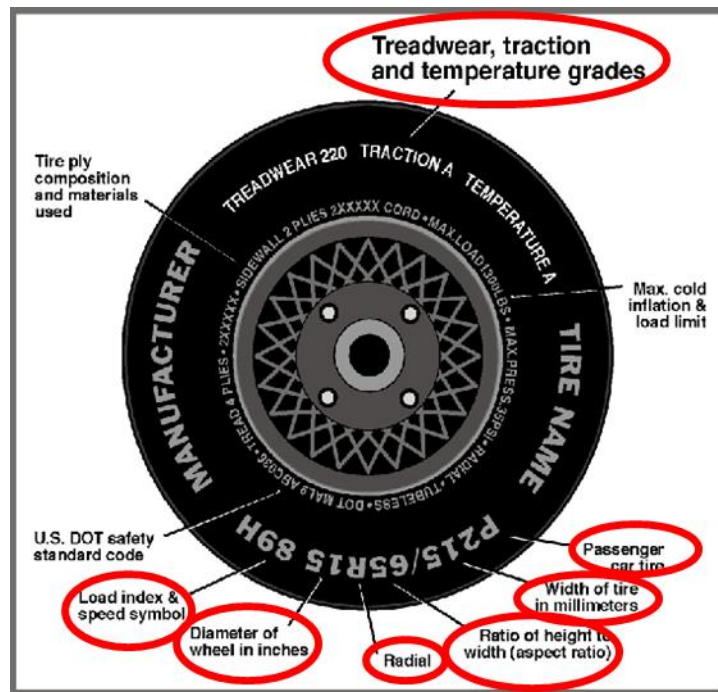
VEHICLE SEATING AND WEIGHT CAPACITY

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	N/A	
Number of Occupants	2	3	N/A	5
Capacity Wt. (VCW) (kg)				428.0
Cargo Wt. (RCLW) (kg)				88.0

DATA SHEET NO. 1 - GENERAL TEST AND VEHICLE PARAMETER DATA (CONT'D)

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold / Test 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 Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	99H	99H
Tire Material	Steel, Polyester, Nylon	Steel, Polyester, Nylon
DOT Safety Code Right	15MJF BU HA 4523	15MJF BU HA 4523
DOT Safety Code Left	15MJF BU HA 4423	15MJF BU HA 4423

**DATA SHEET NO. 1 - GENERAL TEST AND VEHICLE PARAMETER DATA
(CONT'D)**

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	421.4	263.4		445.6	352.2	
Right	kg	401.0	251.8		420.6	341.2	
Ratio	%	61.5	38.5		55.5	44.5	
Totals	kg	822.4	515.2	1337.6	866.2	693.4	1559.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1337.6
Weight of 1 P572E ATD & 1 P572O ATD	kg	139.3
Rated Cargo/Luggage Weight (RCLW)	kg	88.0
Vehicle Target Weight (TVTW)	kg	1564.9

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front)
As Delivered	mm	788	794	819	825	1041
As Tested	mm	783	788	778	775	1201
Post Test	mm	861	868	775	795	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2702
Total Vehicle Length at Left Side	mm	4390
Total Vehicle Length at Centerline	mm	4525
Total Vehicle Length at Right Side	mm	4391
Weight of Ballast in Cargo Area	kg	43.0
Weight of Vehicle Components Removed	kg	0.0
Amount of Stoddard Solvent in Fuel Tank	liters	46.5

LIST OF COMPONENTS REMOVED TO MEET TEST WEIGHT: None

**DATA SHEET NO. 1 - GENERAL TEST AND VEHICLE PARAMETER DATA
(CONT'D)**

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

TARGET VEHICLE STRUCTURAL MEASUREMENT

	Elements	Pre-Test (mm)
1	Total Length	4525
2	Total Width	1818
3	Bumper Top Height	568
4	Bumper Bottom Height	442
5	Longitudinal Member Top Height	549
6	Distance Between Longitudinal Members	943
7	Longitudinal Member Width	90
8	Engine Top Height	895
9	Engine Bottom Height	248
10	Engine and Gearbox Width	640
11	Front Bumper-Engine Distance	467
12	Front Shock Absorber Fixing Height	920
13	Bonnet Leading Edge Height	880
14	Front Shock Absorber Fixing Width	1163
15	Front Bumper – Front Axle Distance	923
16	Front Axle – A-Pillar Distance	555
17	A-Pillar – B-Pillar Distance	965
18	B-Pillar – Rear Axle Distance	1277
19	B-Pillar – C-Pillar Distance	970
20	Roof Sill Bottom Height	1320
21	Roof Sill Top Height	1388
22	Floor Sill Bottom Height	390
23	Floor Sill Top Height	438

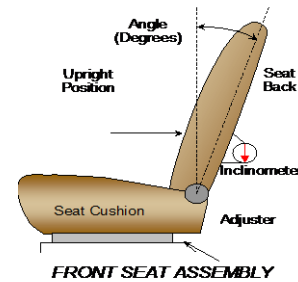
DATA SHEET NO. 2 - SEAT ADJUSTMENT, FUEL SYSTEM AND STEERING WHEEL DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

NORMAL DESIGN RIDING POSITION

For adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable



	Degree
Driver Seat back angle:	-20.9
Passenger Seat back angle:	-21.4

SEAT FORE/AFT POSITIONS

Describe the method of determining seat fore/aft positions.

Driver: Mid position, Positioned according to Form 1

Passenger: Full forward, Positioned according to Form 1

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	260	10
Passenger Seat	260	0

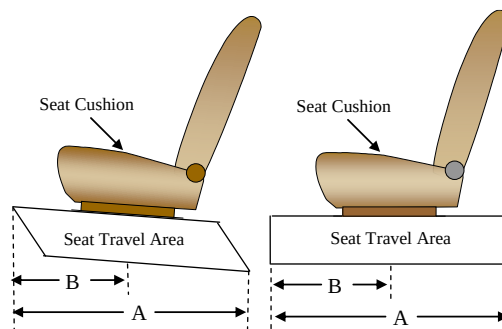
SEAT BELT UPPER ANCHORAGE

Describe the method of positioning seat belt upper anchorages.

Driver: One below uppermost, Positioned according to Form 1

Passenger: One below uppermost, Positioned according to Form 1

	Total No. of Positions	Placed in Position No.
Driver Seat	Fixed	Fixed
Passenger Seat	Fixed	Fixed



DATA SHEET NO. 2 - SEAT ADJUSTMENT, FUEL SYSTEM AND STEERING WHEEL DATA (CONT'D)

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

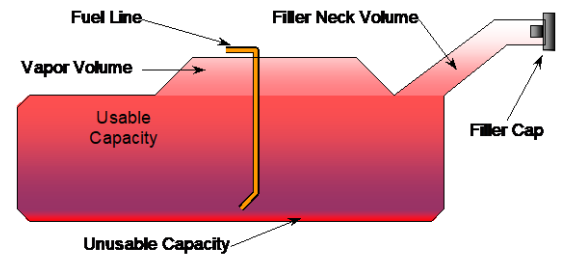
NHTSA No.: M20240103
Test Date: 6/25/2024

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	50.0
Usable Capacity of "Optional Tank"	N/A
92%-94% of Usable Capacity	46.5
Actual Amount of Solvent Used	46.5
1/3 of Usable Capacity	16.7

Describe the fuel system - what type of fuel pump, details about how it operates, etc.

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

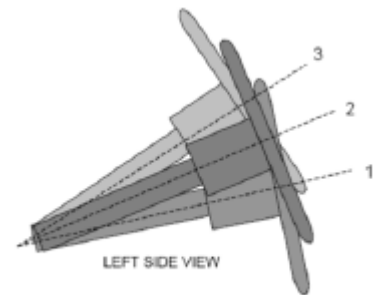


VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. Describe how this measurement was taken.

Steel square was placed across the rim of the steering wheel, an inclinometer was placed on plate and the angle was measured. Telescope travel was measured full in and full out and set at the midpoint.



STEERING COLUMN ASSEMBLY

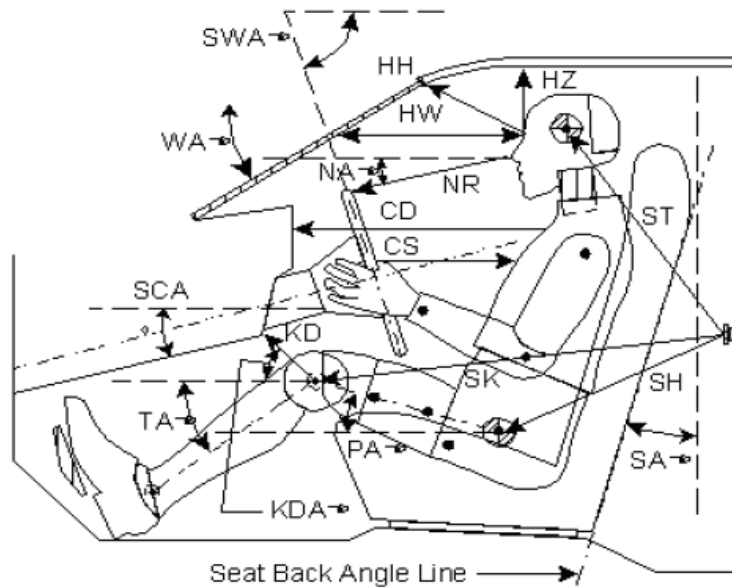
STEERING COLUMN POSITIONS

	Degrees	Fore/Aft Position (mm)
Lowermost Position No. 1	19.2	
Geometric Center Position No. 2	21.6	
Uppermost Position No. 3	23.9	
Telescoping Steering Wheel Travel		36
Test Position	21.6	18

DATA SHEET NO. 3 - DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
 Test Date: 6/25/2024

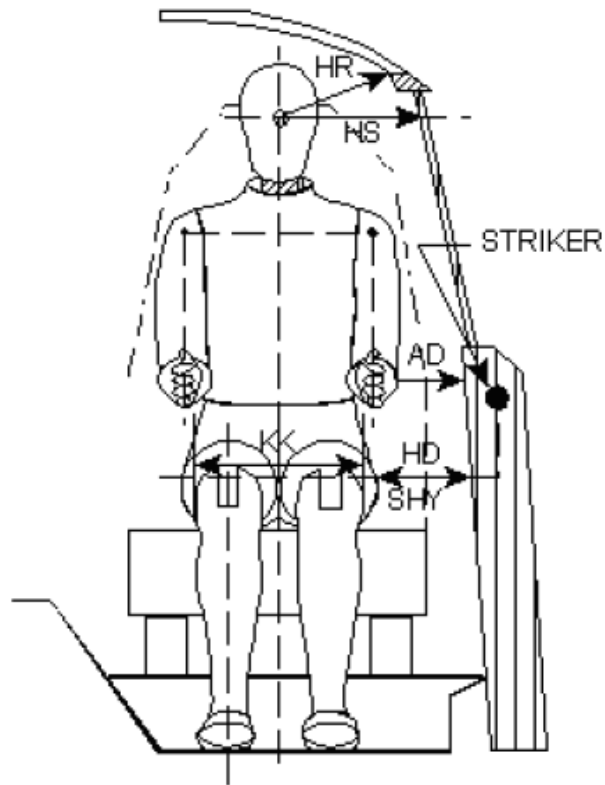


Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		27.5		
SWA°	Steering Wheel Angle		21.6		
SCA°	Steering Column Angle		22.8		
SA°	Seat Back Angle (on head rest post)		20.65		22.65
HZ	Head to Roof (Z)	203		222	
HH	Head to Header	369		315	
HW	Head to Windshield	643		631	
NR	Nose to Rim	388	4.75		
CD	Chest to Dash	545		360	
CS	Chest to Steering Hub	325			
RA	Rim to Abdomen	210			
KDL	Left Knee to Dash	214	10.9	76	15.3
KDR	Right Knee to Dash	188	11.3	82	16.2
PA°	Pelvic Angle		23.05		20.15
TA°	Tibia Angle		40.3		61.45
SK	Striker to Knee	622	0.2	721	3.0
ST	Striker to Head	610	59.0	585	41.3
SH	Striker to H-Point	355	33.7	457	19.3

DATA SHEET NO. 4 - DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

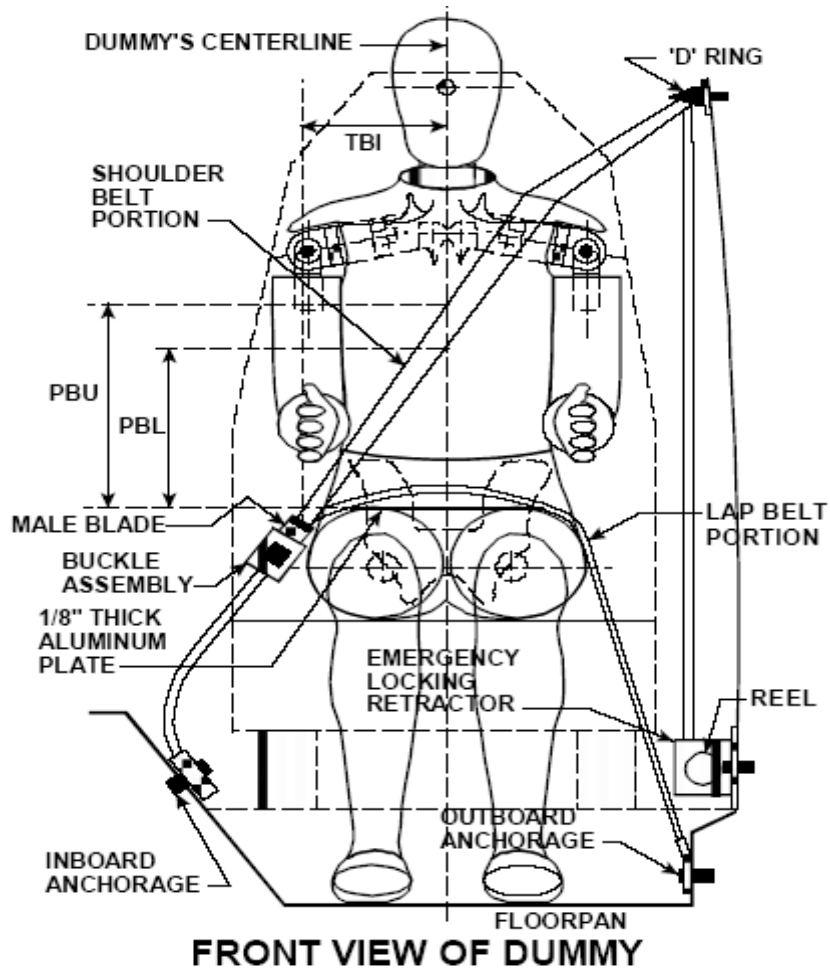


Code	Measurement Description	Driver	Passenger
AD	Arm to Door	64	107
HD	H-Point to Door	138	175
HR	Head to Side Header	211	261
HS	Head to Side Window	344	389
KK	Knee to Knee	265	166
SHY	Striker to H-Point (Y Direction)	270	285
AA	Ankle to Ankle	267	160

DATA SHEET NO. 5 - SEAT BELT POSITIONING DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
PBU – Top surface of reference to belt upper edge	mm	330	280
PBL – Top surface of reference to belt lower edge	mm	250	205

BELT LENGTH DATA

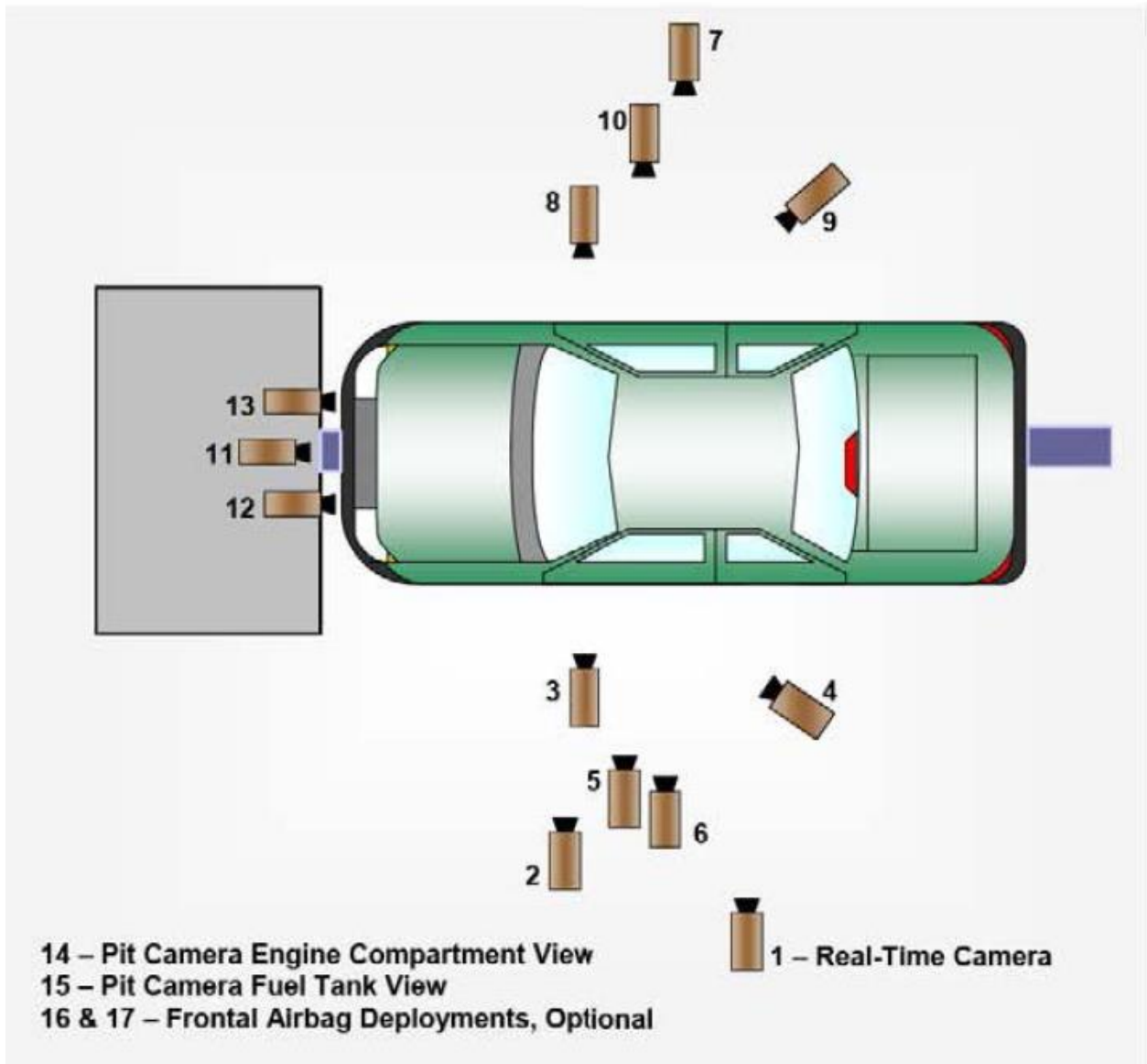
Measurement Description	Units	Driver	Passenger
Shoulder belt length as measured on ATD	mm	855	960
Lap belt length as measured on ATD	mm	578	720
Remainder of belt on reel	mm	1060	808
Total belt length for continuous webbing systems	mm	2493	2488

DATA SHEET NO. 6 - HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

CAMERA POSITIONS FOR FRONTAL IMPACTS



**DATA SHEET NO. 6 - HIGH SPEED CAMERA LOCATIONS AND DATA
(CONT'D)**

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

CAMERA LOCATIONS

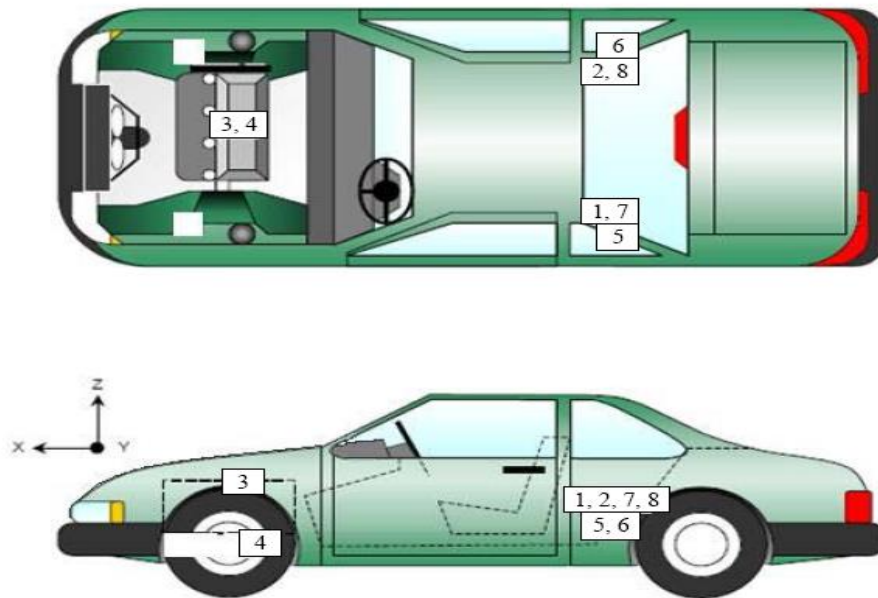
No.	Camera View	Location (mm)			Lens (mm)	Frame Speed (fps)
		X	Y	Z		
1	REAL-TIME LEFT OVERALL	-1793	-4847	-1490	Zoom	30
2	LEFT OVERALL	-2518	-3437	-1185	8.5	1000
3	DRIVER CLOSE-UP	-2383	-4195	-1493	50	1000
4	LEFT FRONT HALF	-732	-4392	-1300	25	1000
5	LEFT ANGLE	-3664	-2695	-1598	25	1000
6	STEERING COLUMN	-2484	-4173	-1608	50	1000
7	RIGHT OVERALL	-2714	4876	-1512	8.5	1000
8	PASSENGER CLOSE-UP	-2270	5287	-1486	50	1000
9	RIGHT FRONT HALF	-1248	4488	-1235	25	1000
10	RIGHT ANGLE	-3714	2872	-1482	25	1000
11	WINDSHIELD	0	0	-2615	20	1000
12	DRIVER WINDSHIELD	0	-340	-2650	25	1000
13	PASSENGER WINDSHIELD	0	335	3044	25	1000
14	PIT FRONT	-978	0	-334	20	1000
15	PIT REAR	-3235	0	-653	20	1000
16	DRIVER ONBOARD				8.5	1000
17	PASSENGER ONBOARD				8.5	1000

Reference Points: +X – forward of impact plane
+Y – right of monorail center
+Z – into ground

DATA SHEET NO. 7 - VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
 Test Date: 6/25/2024



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Left Rear Accelerometer – X Direction	1628	-272	-591
2	Right Rear Accelerometer – X Direction	1628	317	-595
3	Engine Top X	3837	300	-845
4	Engine Bottom X	3863	168	-243
5	Left Rear Accelerometer – Z Direction	1626	-272	-591
6	Right Rear Accelerometer – Z Direction	1628	317	-595
7	Left Rear Accelerometer – X Direction Redundant	1631	-341	-587
8	Right Rear Accelerometer- X Direction Redundant	1632	391	-593

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

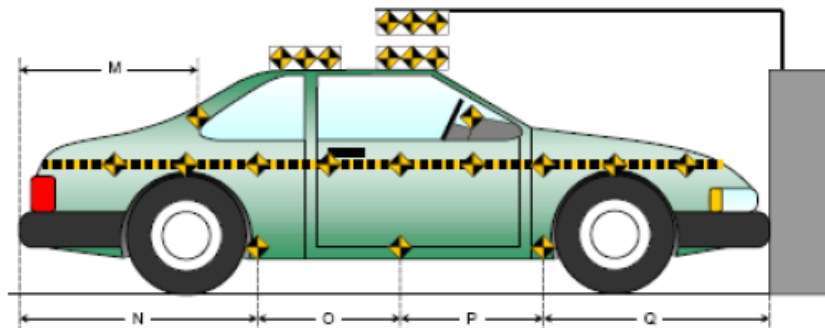
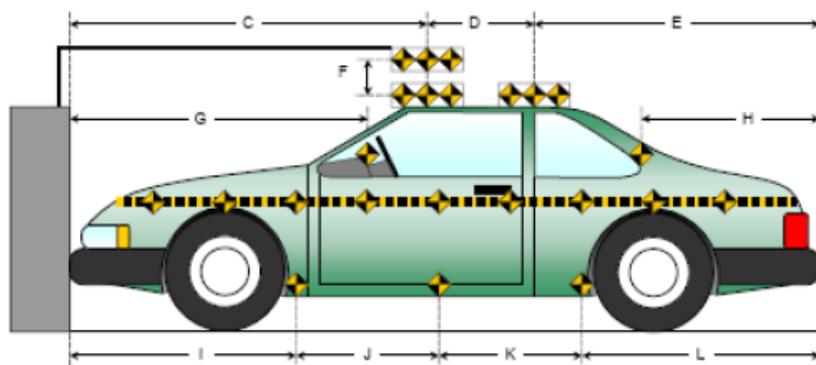
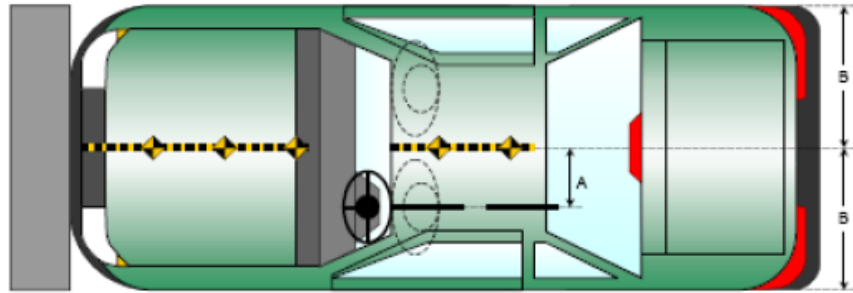
DATA SHEET NO. 8 - PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
 Test Date: 6/25/2024

Item	Value
A	330
B	909
C	2750
D	598
E	1602
F	299
G	1693
H	799
I	1394
J	883
K	880
L	1368
M	790
N	1368
O	877
P	895
Q	1385

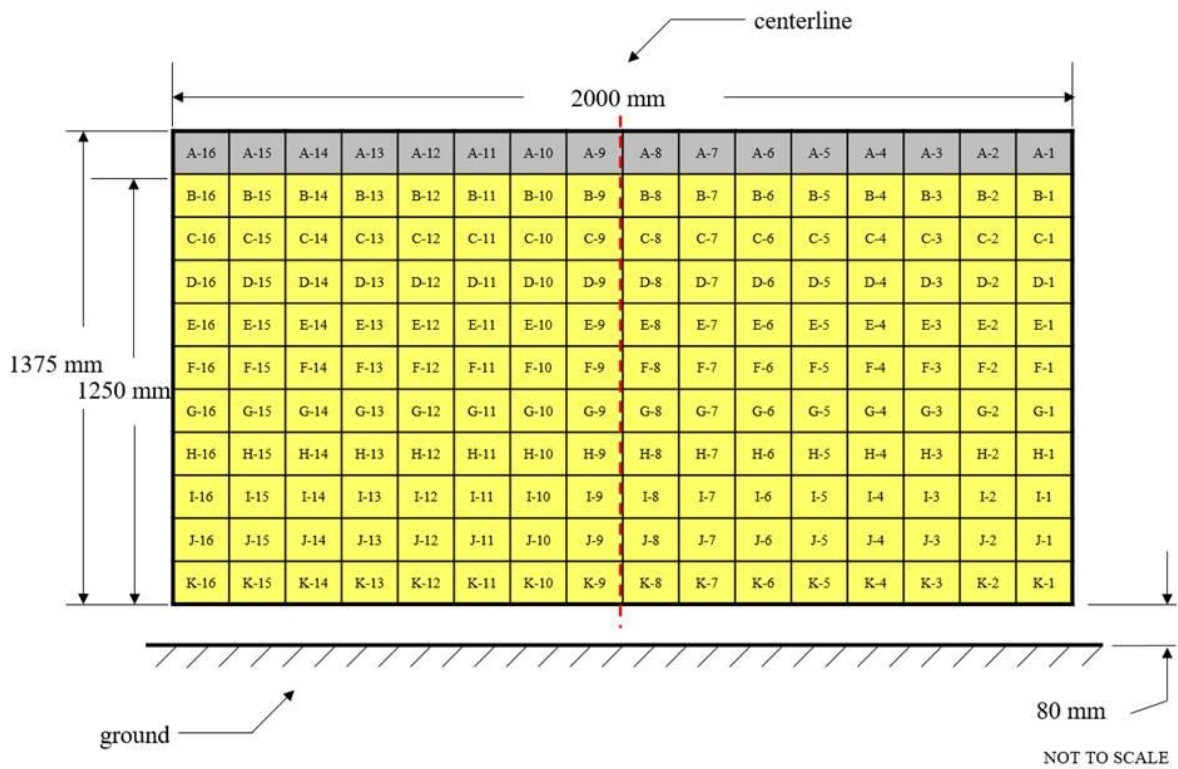
All units in millimeters



DATA SHEET NO. 9 - LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
 Test Date: 6/25/2024



DATA SHEET NO. 10 - TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2024 Chevrolet Trax SUV

NHTSA No.: M20240103

Test Program: NCAP Frontal Impact

Test Date: 6/25/2024

INSTRUMENTATION

Instrumentation	Number of Channels Collected
Driver Dummy Accelerometers	47
Passenger Dummy Accelerometers	47
Vehicle Structure Accelerometers	8
Total	102

CAMERA COVERAGE

Type of Camera	Number Used in this Test
High-Speed Vehicle Onboard	2
High-Speed Offboard	14
Real-Time Panning	2
Total	18

DATA SHEET NO. 11 - POST-TEST OBSERVATIONSTest Vehicle: 2024 Chevrolet Trax SUVNHTSA No.: M20240103Test Program: NCAP Frontal ImpactTest Date: 6/25/2024**TEST DUMMY INFORMATION AND CONTACT LOCATIONS**

Description	Driver	Passenger
Dummy Type / Serial No.	Hybrid III 50th / 037	Hybrid III 5th / DH1659
Head Contact	Frontal Airbag, Head Rest	Frontal Airbag, Head Rest
Upper Torso Contact	Frontal Airbag	Frontal Airbag
Lower Torso Contact	Frontal Airbag	Frontal Airbag
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

DOOR OPENING, TRUNK OPENING, AND SEAT TRACK INFORMATION

Description	Driver	Passenger	Other
Locked/Unlocked Doors	Unlocked	Unlocked	
Front Door Opening	No	No	
Rear Door Opening	No	No	
Trunk/Hatch/Tailgate Opening			No
Seat Track Shift (mm)	None	None	
Seat Back Movement from Initial Position	None	None	

POST- OTHER VEHICLE POST-TEST OBSERVATIONS

Critical Areas of Performance	Observations
Windshield Damage	None
Window Damage	None
Other Notable Effects	None

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1625
Center	mm	1607
Right Side	mm	1590
Average	mm	1607

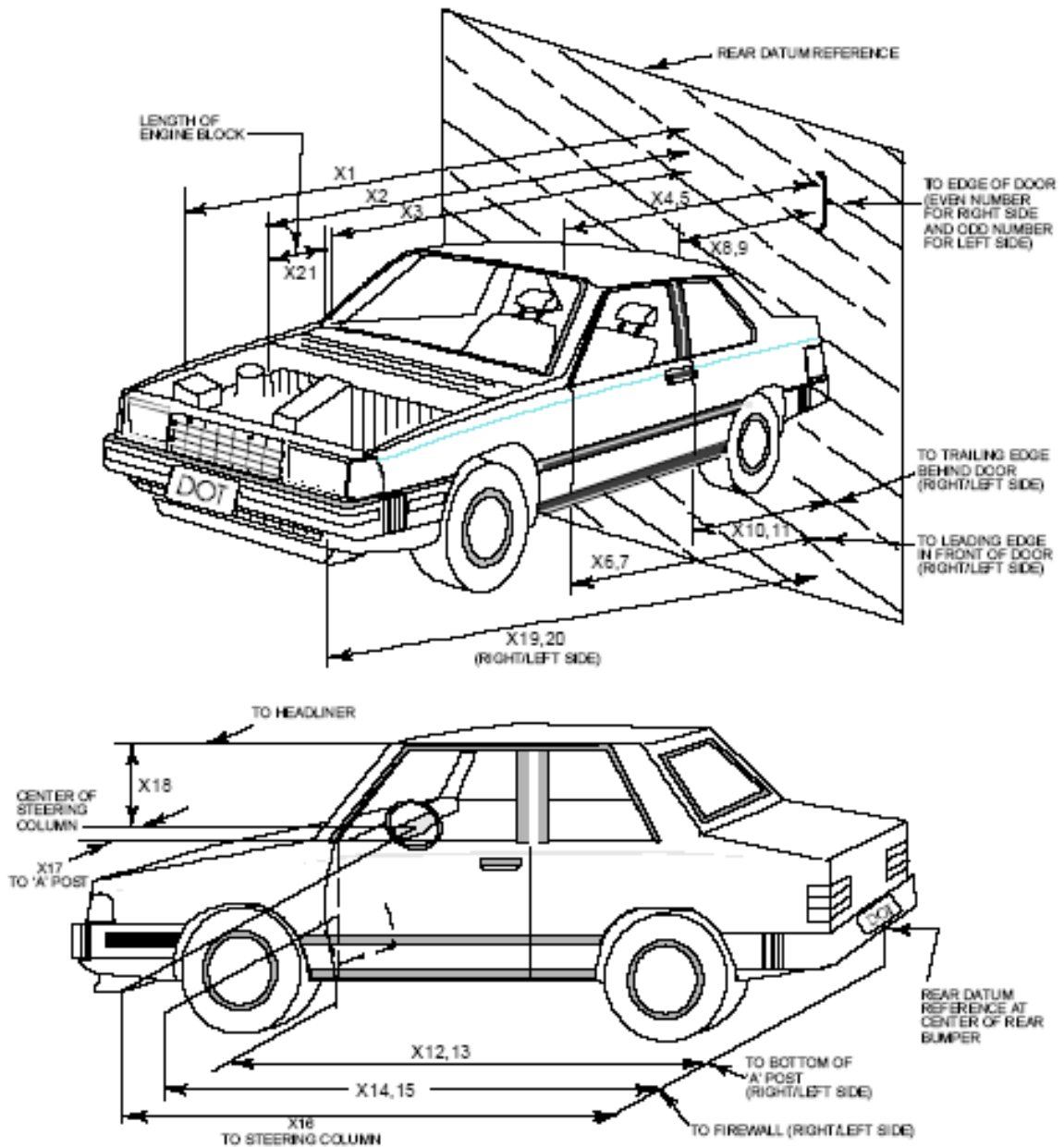
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Driver (Occupant 1)		Passenger (Occupant 2)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	Yes	Yes
Torso/Pelvis Side Airbag	Yes	No	Yes	No
Curtain Side Airbag	Yes	Yes	Yes	Yes
Knee Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Seat Belt Buckle Pretensioner	No	N/A	No	N/A
Other:	No	N/A	No	N/A

DATA SHEET NO. 12 - VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2024 Chevrolet Trax SUV
 Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
 Test Date: 6/25/2024



DATA SHEET NO. 12 - VEHICLE PROFILE MEASUREMENTS (CONT'D)Test Vehicle: 2024 Chevrolet Trax SUVNHTSA No.: M20240103Test Program: NCAP Frontal ImpactTest Date: 6/25/2024

No.	Measurement Description	Pre-Test	Post-Test	Change
1	Total Length of Vehicle at Centerline	4525	4060	-465
2	Rear Surface of Vehicle (RSOV) to Front of Engine	4070	3727	-343
3	RSOV to Firewall	3624	3448	-176
4	RSOV to Upper Leading Edge of Right Door	3080	3070	-10
5	RSOV to Upper Leading Edge of Left Door	3083	3068	-15
6	RSOV to Lower Leading Edge of Right Door	3063	3070	7
7	RSOV to Lower Leading Edge of Left Door	3062	3065	3
8	RSOV to Upper Trailing Edge of Right Door	2051	2040	-11
9	RSOV to Upper Trailing Edge of Left Door	2055	2045	-10
10	RSOV to Lower Trailing Edge of Right Door	2094	2100	6
11	RSOV to Lower Trailing Edge of Left Door	2096	2100	4
12	RSOV to Bottom of "A" Post-of Right Side	3036	3032	-4
13	RSOV to Bottom of "A" Post-of Left Side	3042	3033	-9
14	RSOV to Firewall, Right Side	3457	3463	6
15	RSOV to Firewall, Left Side	3453	3435	-18
16	RSOV to Steering Column	2630	2694	64
17	Center of Steering Column to "A" Post	337	356	19
18	Center of Steering Column to Headliner	410	443	33
19	RSOV to Right Side of Front Bumper	4391	4071	-320
20	RSOV to Left Side of Front Bumper	4390	4010	-380
21	Length of Engine Block	440	440	0
RD	RSOV to Right Side of Dash Panel	2835	2820	-15
CD	RSOV to Center of Dash Panel	2880	2861	-19
LD	RSOV to Left Side of Dash Panel	2854	2843	-11

All Dimensions in mm

DATA SHEET NO. 13 - ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

VEHICLE INFORMATION

VIN: KL77LFE21RC176468
Vehicle Size Category: MPV

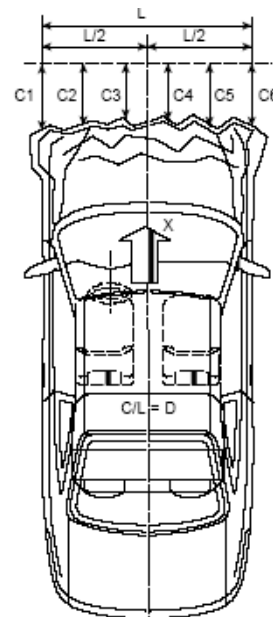
Wheelbase (mm): 2702
Test Weight (kg): 1559.6

ACCELEROMETER DATA

Accelerometer Locations: As listed on Page 15 of this report.
Cal. Procedure/Interval: TRC procedure / 6 month interval
Integration Algorithm: Trapezoidal
Linearity: > 99%
Impact Velocity (km/h): 56.62
Velocity Change (km/h): 68.68
Time of Separation (ms): 138

CRUSH PROFILE

Collision Deformation Classification: 12FDEW2
Midpoint of Damage: Centerline
Damage Region Length (mm): 1220
Impact Mode: Frontal



No.	Measurement Description	Units	Pre-Test	Post-Test	Crush
C1	Crush zone 1 at left side	mm	125	505	380
C2	Crush zone 2 at left side	mm	35	492	457
C3	Crush zone 3 at left side	mm	0	460	460
C4	Crush zone 4 at right side	mm	1	460	459
C5	Crush zone 5 at right side	mm	37	475	438
C6	Crush zone 6 at right side	mm	124	444	320
L	C1 to C6	mm	1220	1217	-3

DATA SHEET NO. 14 - VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

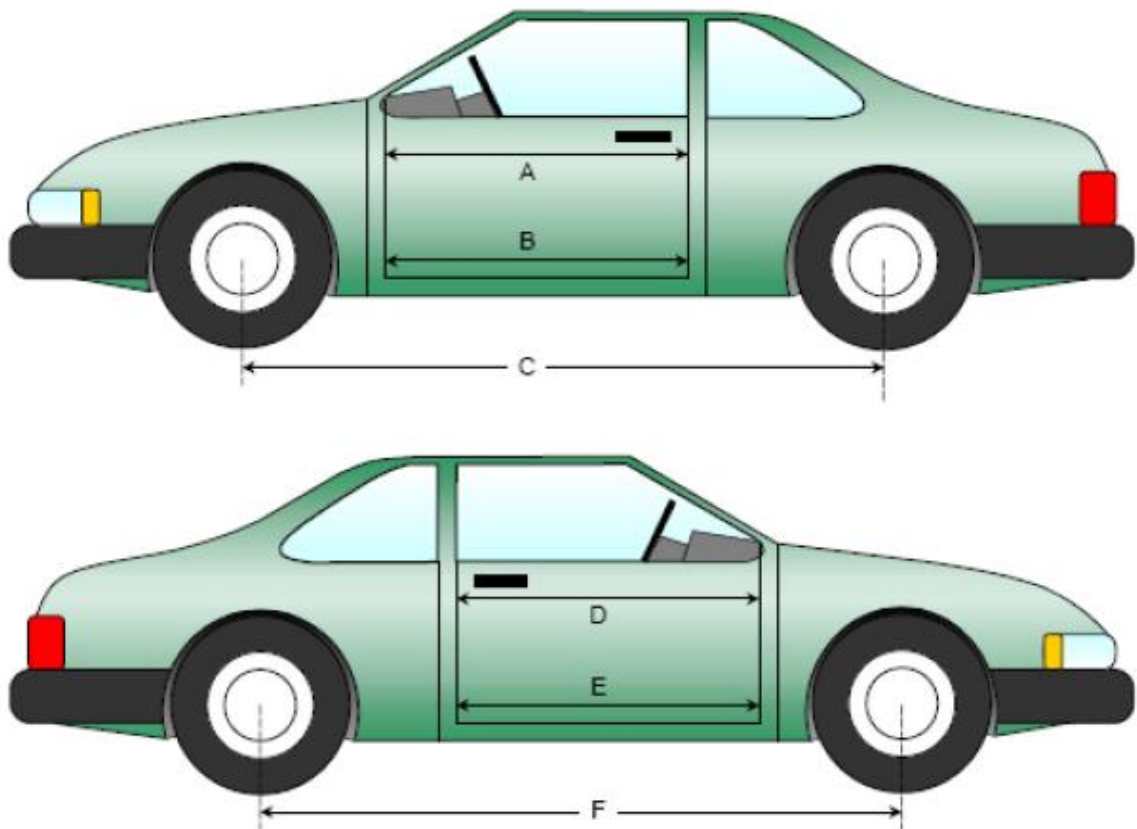
NHTSA No.: M20240103
Test Date: 6/25/2024

DOOR OPENING WIDTH

No.	Description	Units	Pre-Test	Post-Test	Change
A	Left Side Upper	mm	948	950	2
B	Left Side Lower	mm	887	890	3
D	Right Side Upper	mm	950	951	1
E	Right Side Lower	mm	890	892	2

WHEELBASE MEASUREMENTS

No.	Description	Units	Pre-Test	Post-Test	Change
C	Left Side Wheelbase	mm	2702	2585	-117
F	Right Side Wheelbase	mm	2702	2622	-80



¹ Front suspension damaged and wheels fell off measurements not available

DATA SHEET NO. 14 - VEHICLE INTRUSION MEASUREMENTS (CONT'D)

Test Vehicle: 2024 Chevrolet Trax SUV

NHTSA No.: M20240103

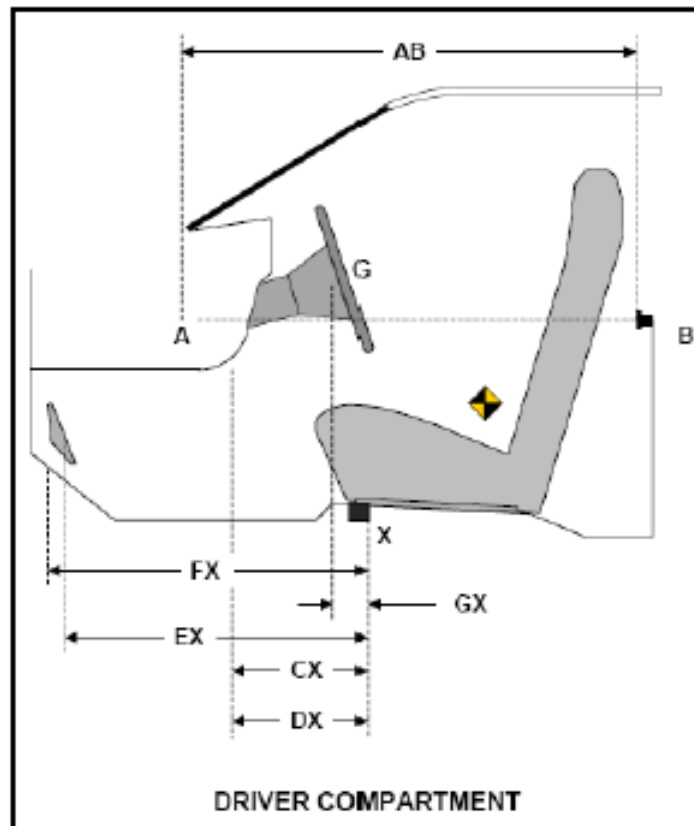
Test Program: NCAP Frontal Impact

Test Date: 6/25/2024

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Change
AB	Door Opening (Inside Window Jam)	mm	970	958	-12
CX	Left Knee Bolster to X	mm	300	301	1
DX	Right Knee Bolster to X	mm	318	314	-4
EX	Brake Pedal to X	mm	582	520	-62
FX	Foot Rest to X	mm	617	608	-9
GX	Center of Steering Column Wheel Hub to X	mm	60	131	71

X = Front of Seat Track (Stationary)



DATA SHEET NO. 15 - SUMMARY OF INDICANT FMVSS 212 AND FMVSS 219 (PARTIAL) DATA

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

Please provide windshield mounting details.

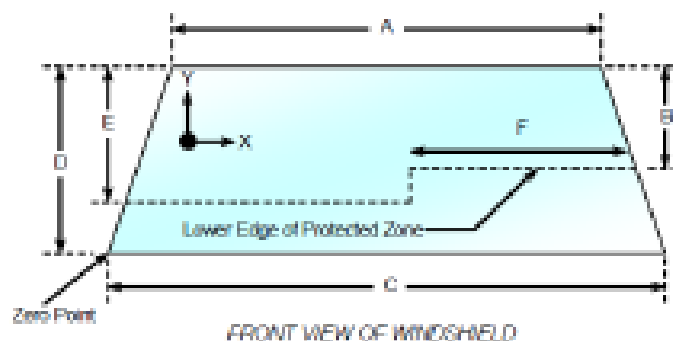
The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicle not equipped with occupant passive restraint and 50% for each side of the windshield for vehicle which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.6°C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2155.5	2155.5	100.0
Right Side	2155.5	2155.5	100.0
Total	4311	4311	100.0

Item	Units	Value
A	mm	1182
B	mm	441
C	mm	1415
D	mm	857
E	mm	498
F	mm	544



AREAS OF PROTECTED ZONE FAILURES

A. Provide coordinates of the area that the protected zone was penetrated more than .25 inches by a vehicle component other than one that is normally in contact with the windshield.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

B. The inner surface of the windshield was penetrated by the hood support beneath the protected zone.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

**DATA SHEET NO. 16 - FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER
RESULTS**

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 21.6°C

Test Time: 17:08

Stoddard Solvent Spillage Measurements

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

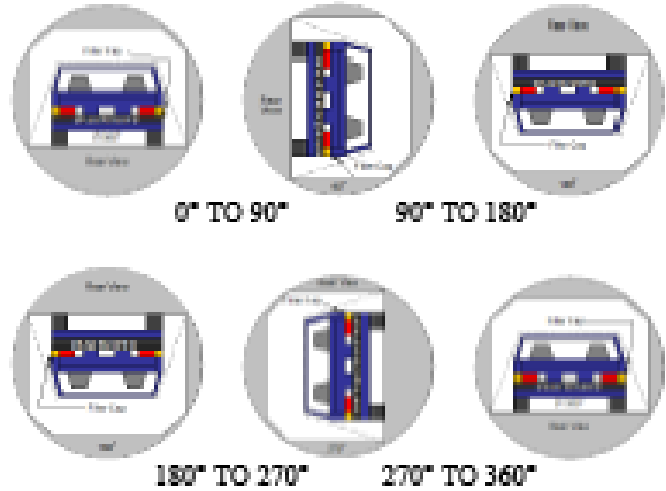
DATA SHEET NO. 16 - FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS (CONT'D)

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage:

None



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	1480

FMVSS 301 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

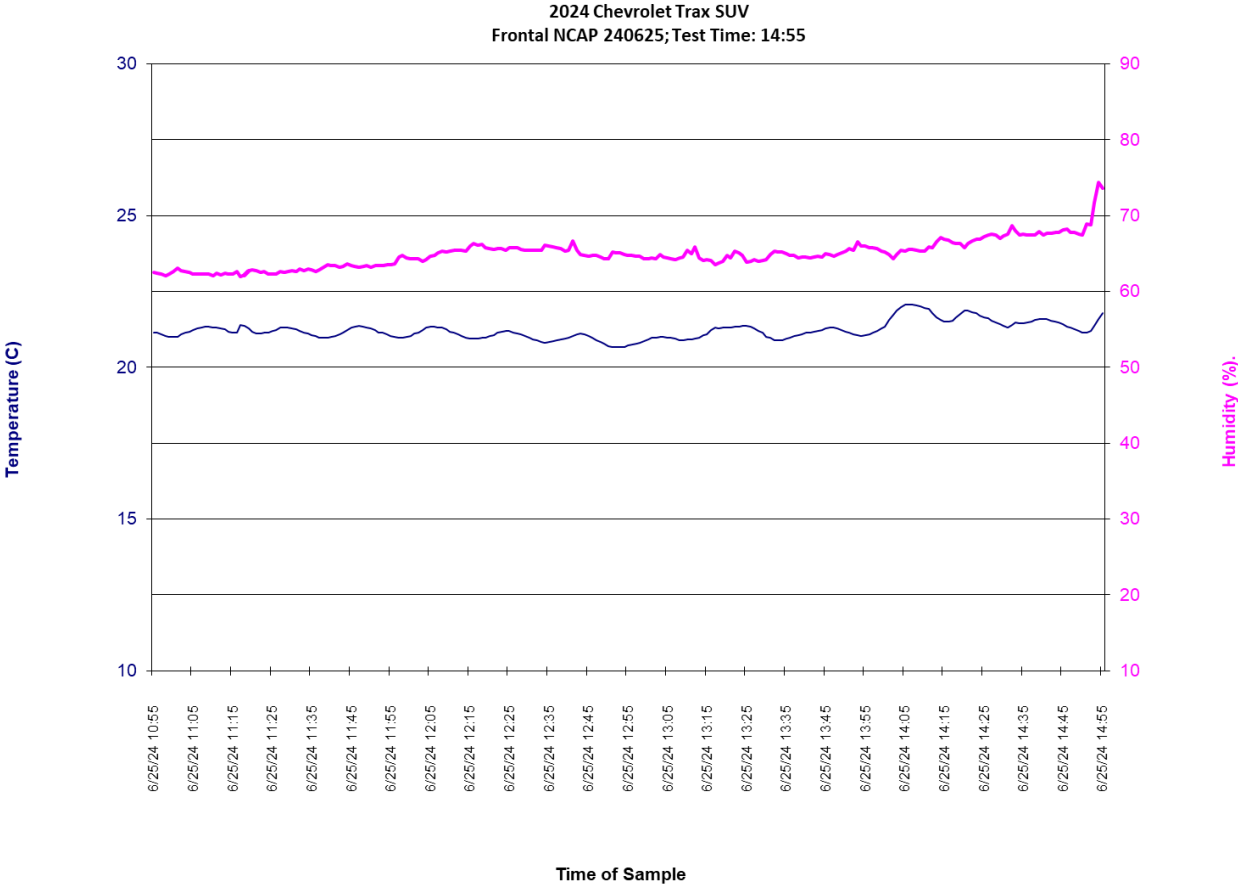
SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 17 - DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2024 Chevrolet Trax SUV
Test Program: NCAP Frontal Impact

NHTSA No.: M20240103
Test Date: 6/25/2024



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

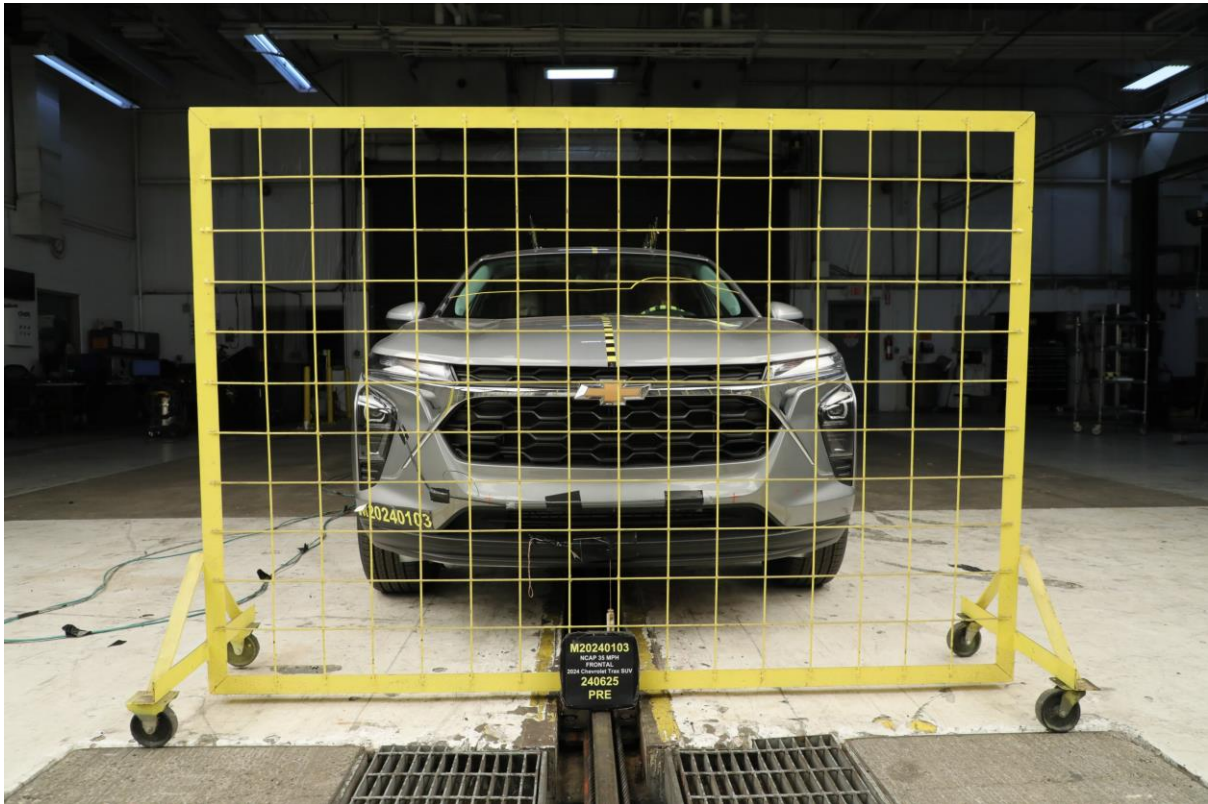
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5	Tire Placard	A-7
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11	Post-Test Left View of Test Vehicle	A-10
12	Pre-Test Right View of Test Vehicle	A-11
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14	Pre-Test Right Front 3-4 View	A-12
15	Post-Test Right Front 3-4 View	A-12
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001 Load Cell Location



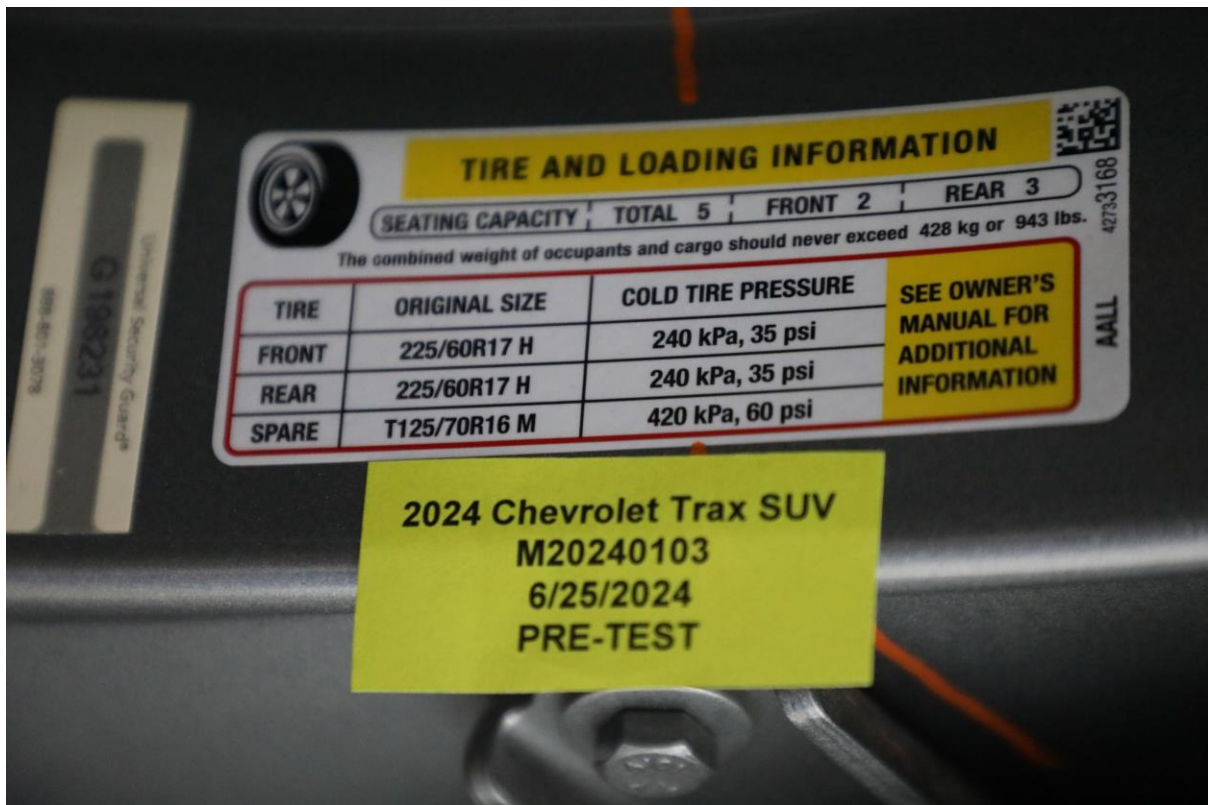
002 Pre-Test Load Cell Wall



003 Post-Test Load Cell Wall



004 Manufacturer's Label



005 Tire Placard

Intentionally Left Blank



006 2024 Chevrolet Trax SUV Frontal As Delivered



007 Left Rear 3-4 View, as Received



008 Pre-Test Front View of Test Vehicle



009 Post-Test Front View of Test Vehicle



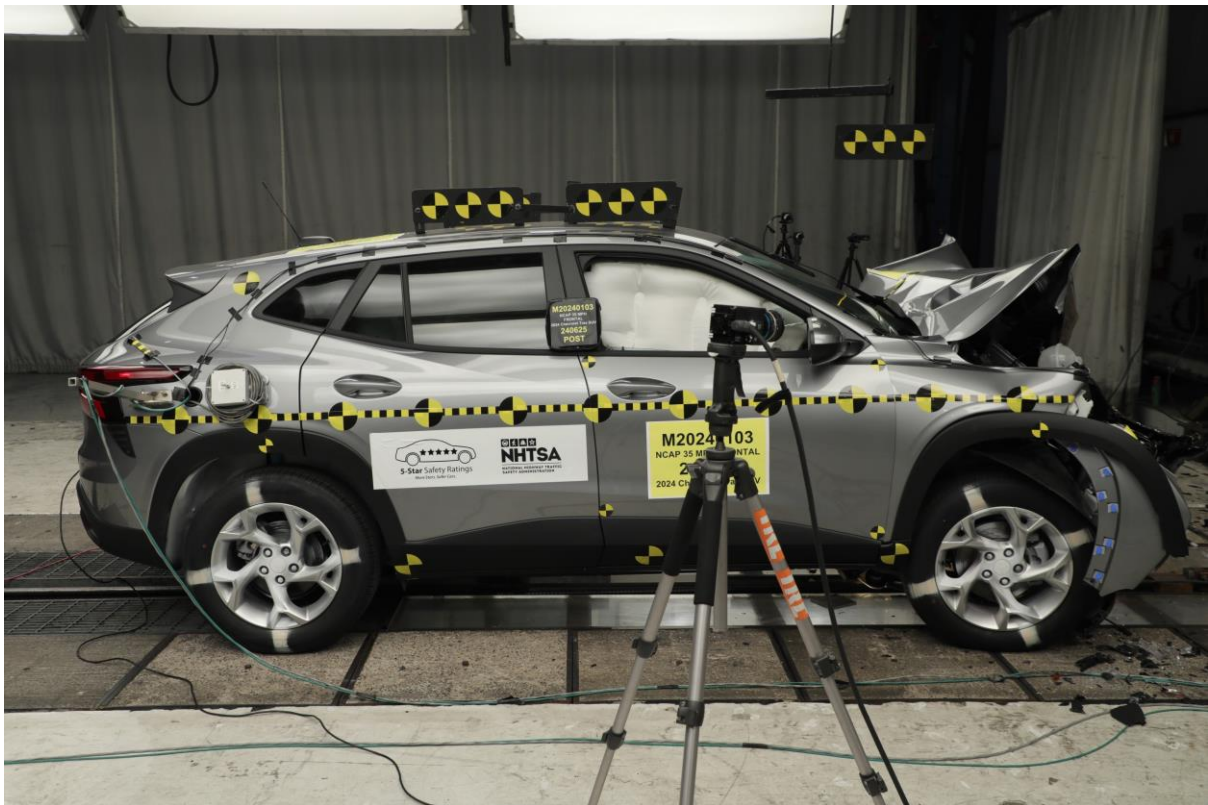
010 Pre-Test Left View of Test Vehicle



011 Post-Test Left View of Test Vehicle



012 Pre-Test Right View of Test Vehicle



013 Post-Test Right View of Test Vehicle



014 Pre-Test Right Front 3-4 View



015 Post-Test Right Front 3-4 View



016 Pre-Test Left Rear 3-4 View



017 Post-Test Left Rear 3-4 View



018 Pre-Test Windshield View



019 Post-Test Windshield View



020 Pre-Test Engine Compartment View



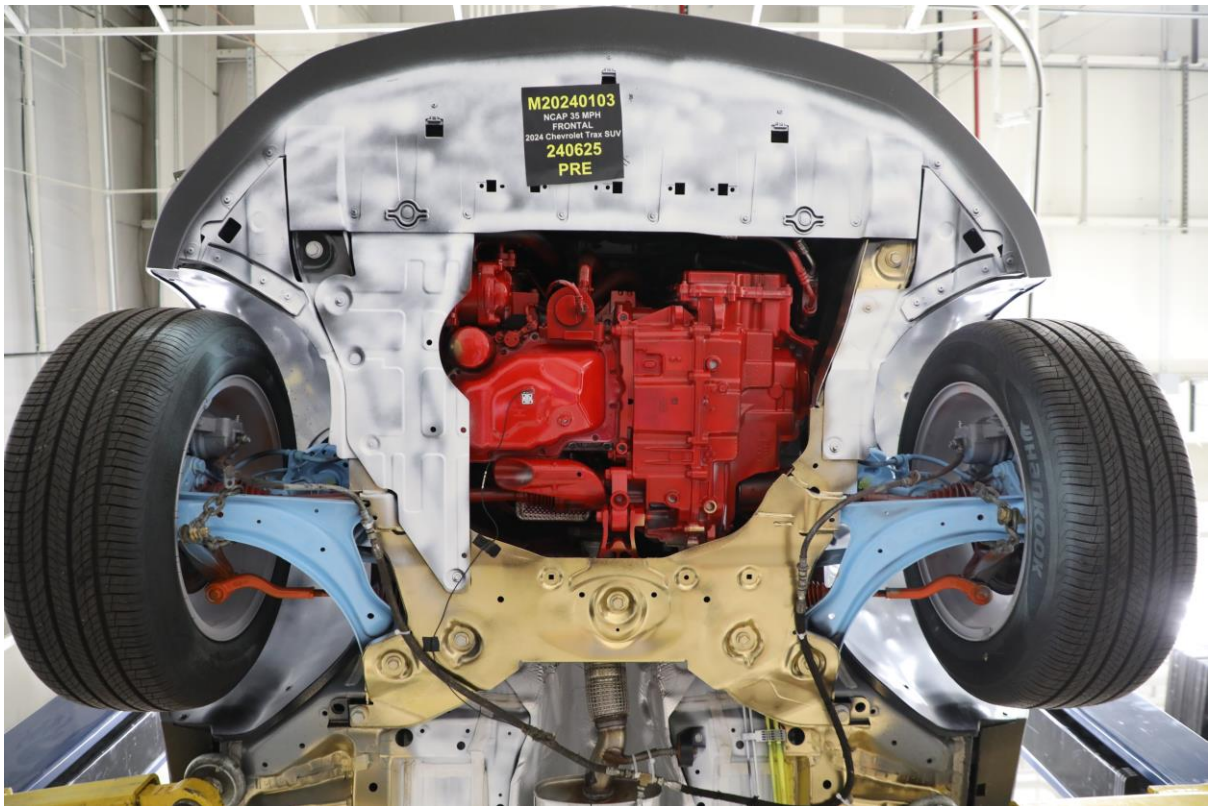
021 Post-Test Engine Compartment View



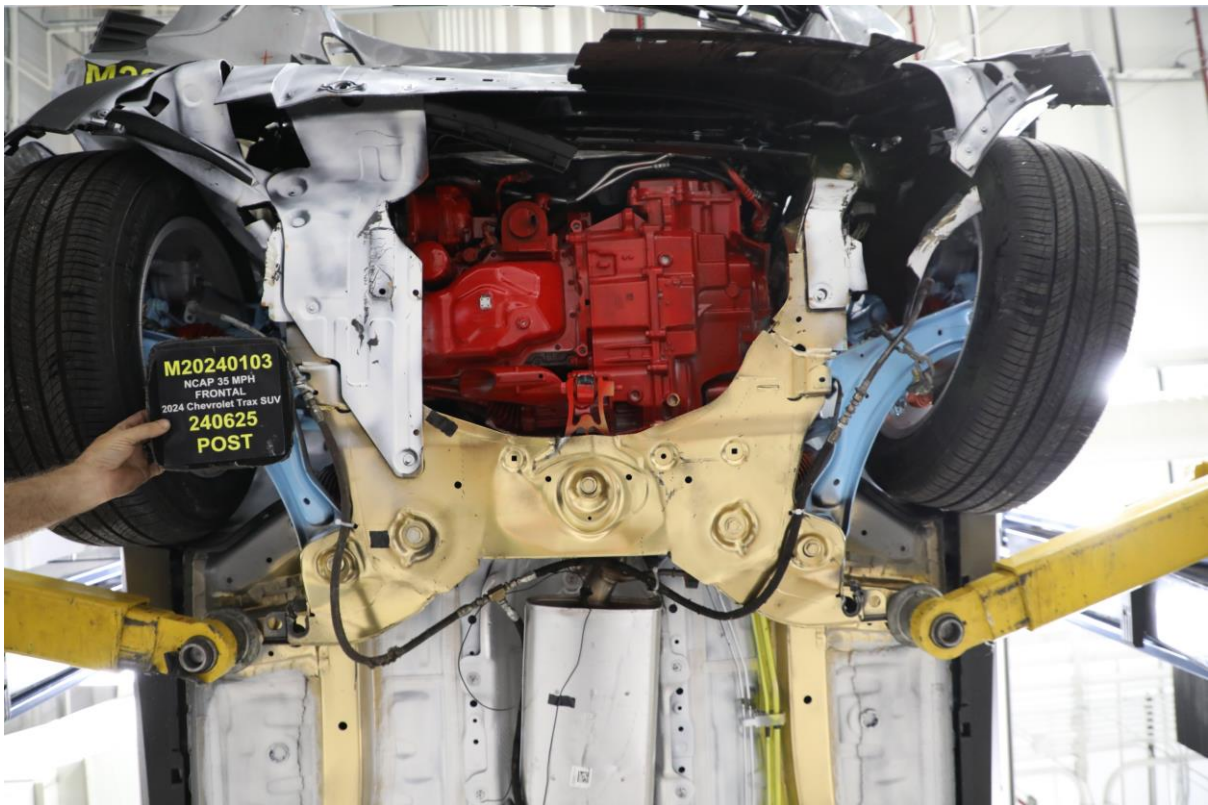
022 Pre-Test Fuel Filler Cap View



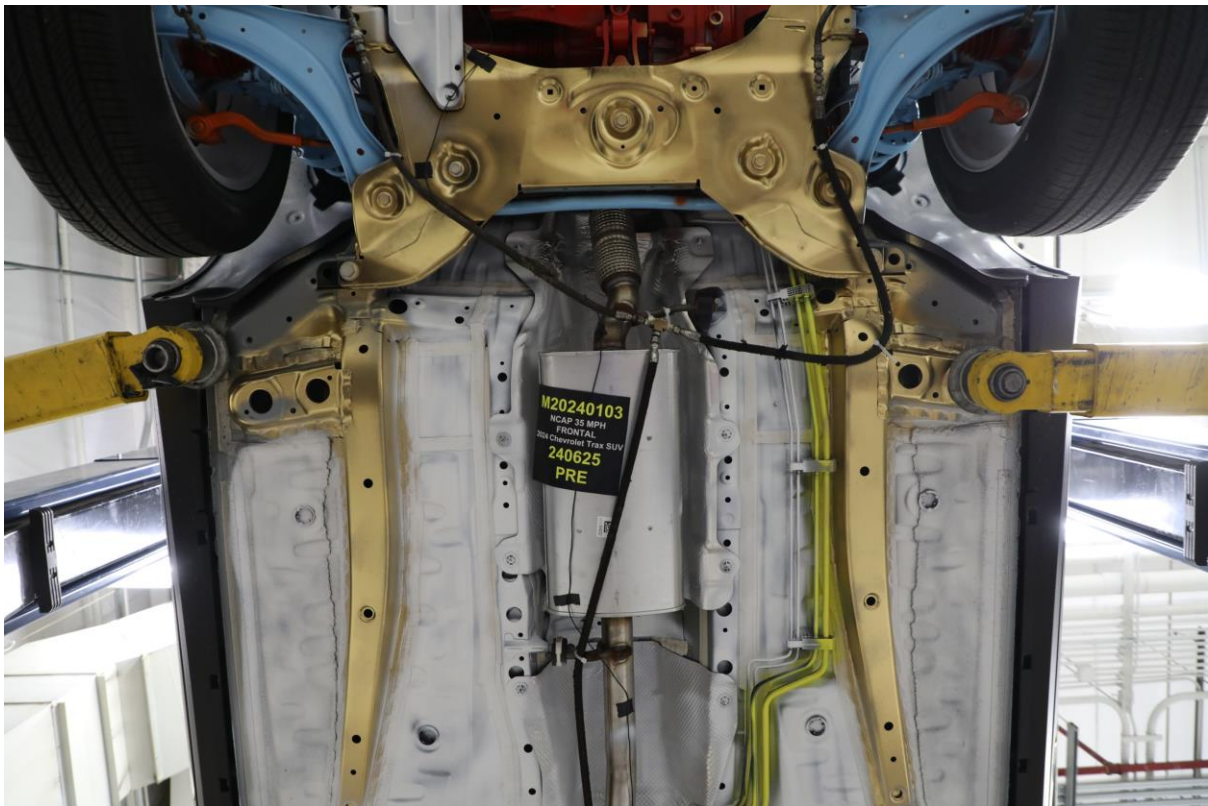
023 Post-Test Fuel Filler Cap View



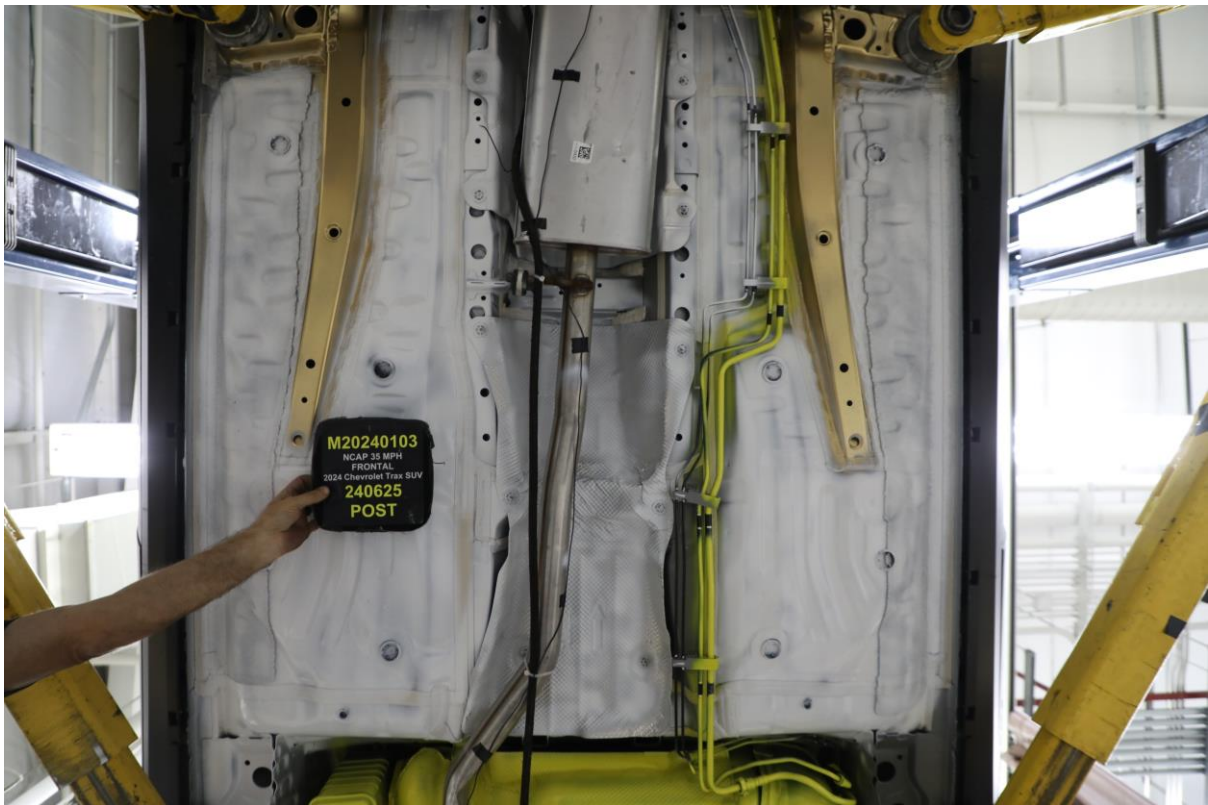
024 Pre-Test Front Underbody View



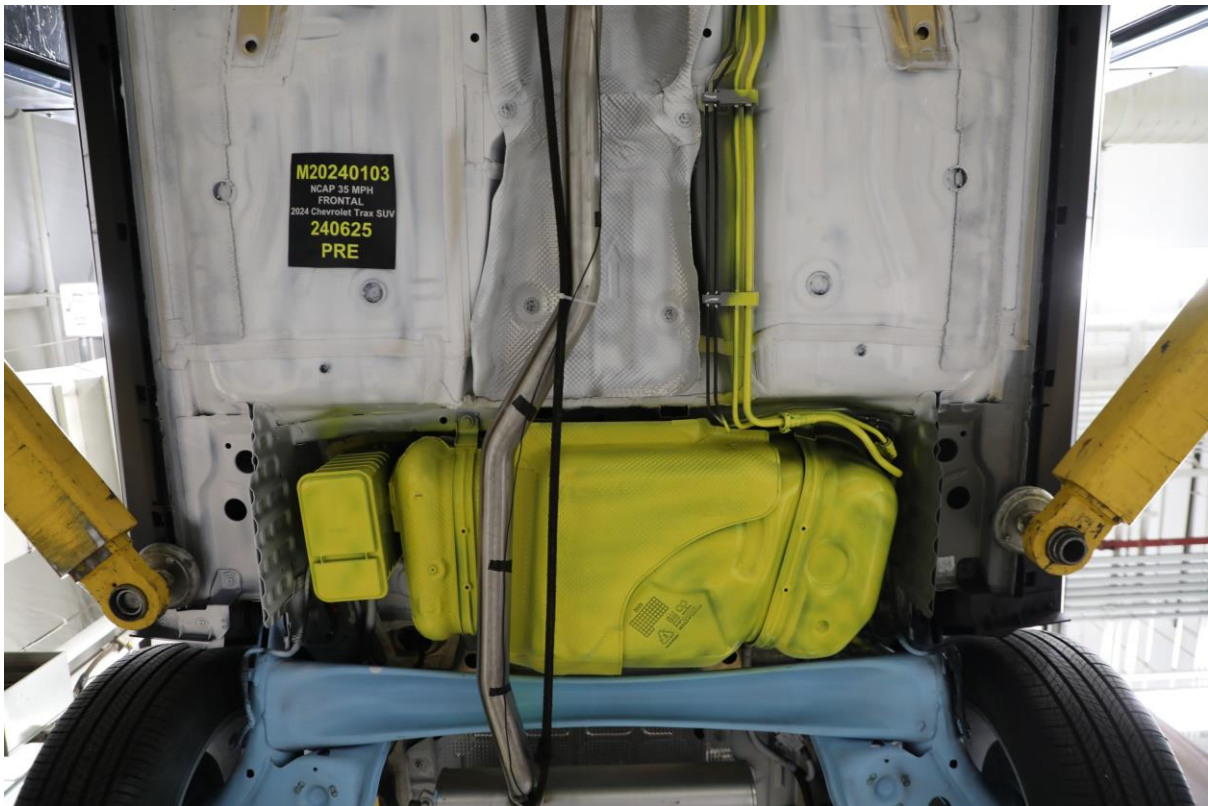
025 Post-Test Front Underbody View



025a Pre-Test Mid Front Underbody View



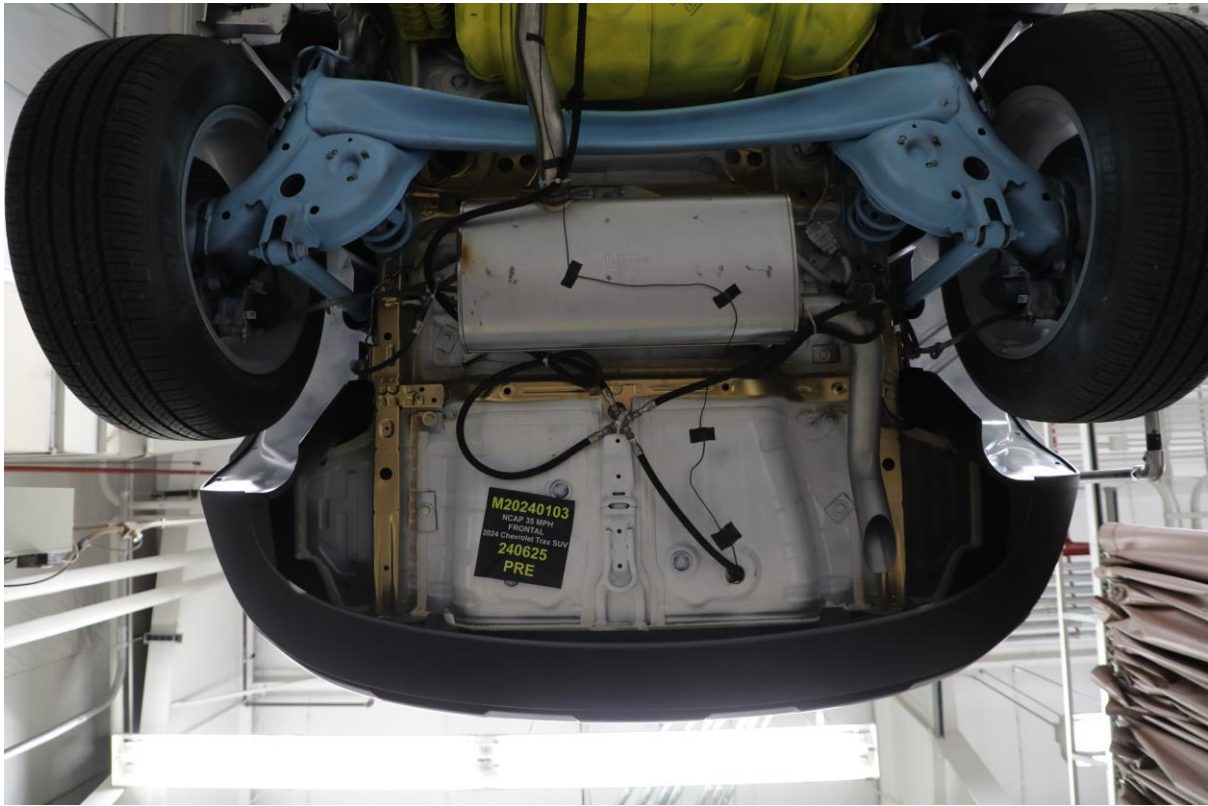
025b Post-Test Mid Front Underbody View



025c Pre-Test Mid Rear Underbody View



025d Post-Test Mid Rear Underbody View



026 Pre-Test Rear Underbody View



027 Post-Test Rear Underbody View



028 Pre-Test Dummy Cable Routing



029 Post-Test Dummy Cable Routing



030 Pre-Test Driver Dummy Front View



031 Post-Test Driver Dummy Front View



032 Pre-Test Driver Dummy Window View



033 Post-Test Driver Dummy Window View



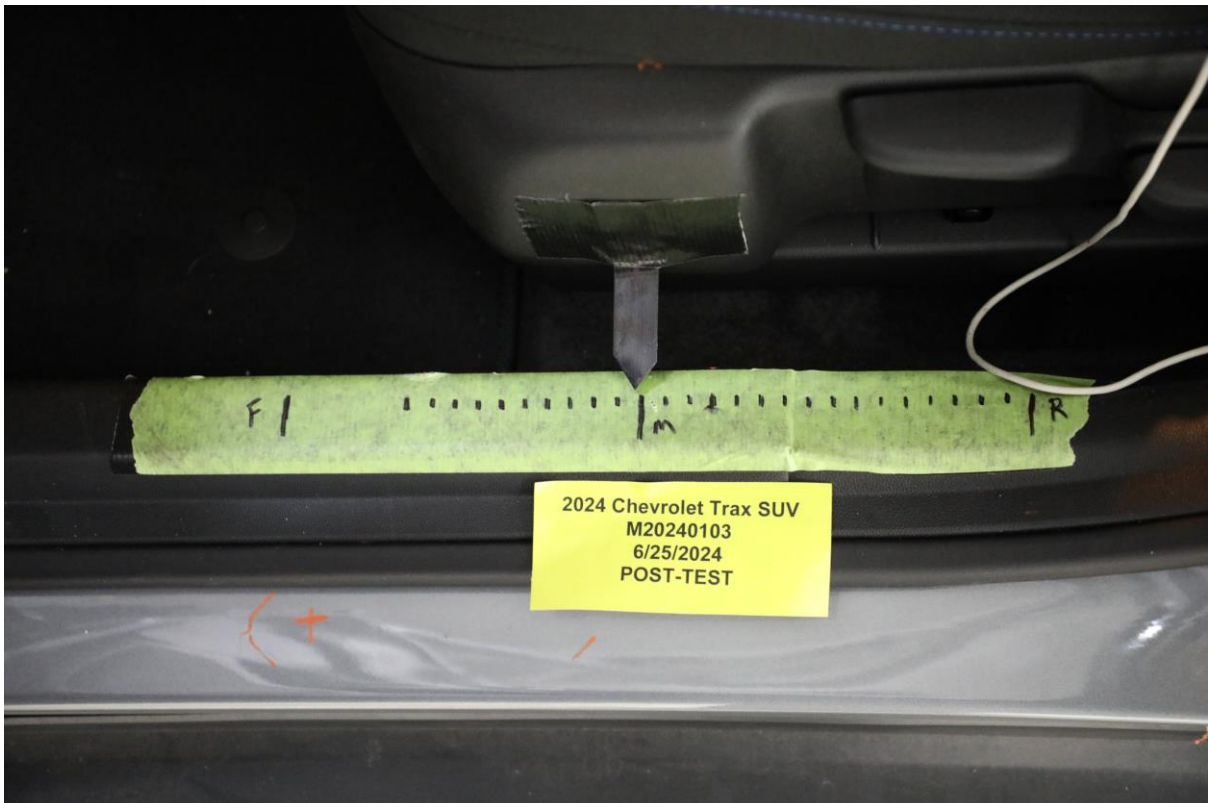
034 Pre-Test Driver Dummy and Vehicle Interior View



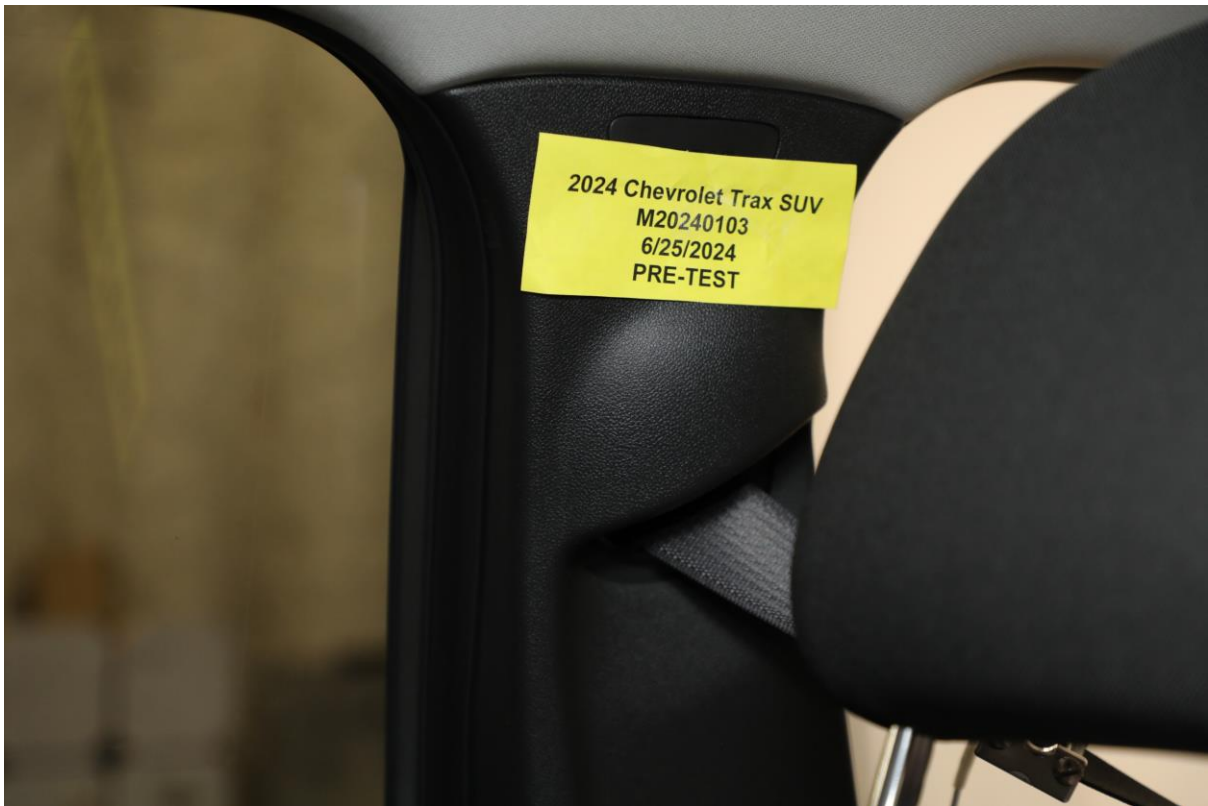
035 Post-Test Driver Dummy and Vehicle Interior View



036 Pre-Test Driver's Seat Fore-Aft Markings



037 Post-Test Driver's Seat Fore-Aft Markings



038 Pre-Test View of Belt Anchorage for Driver Dummy



039 Post-Test View of Belt Anchorage for Driver Dummy



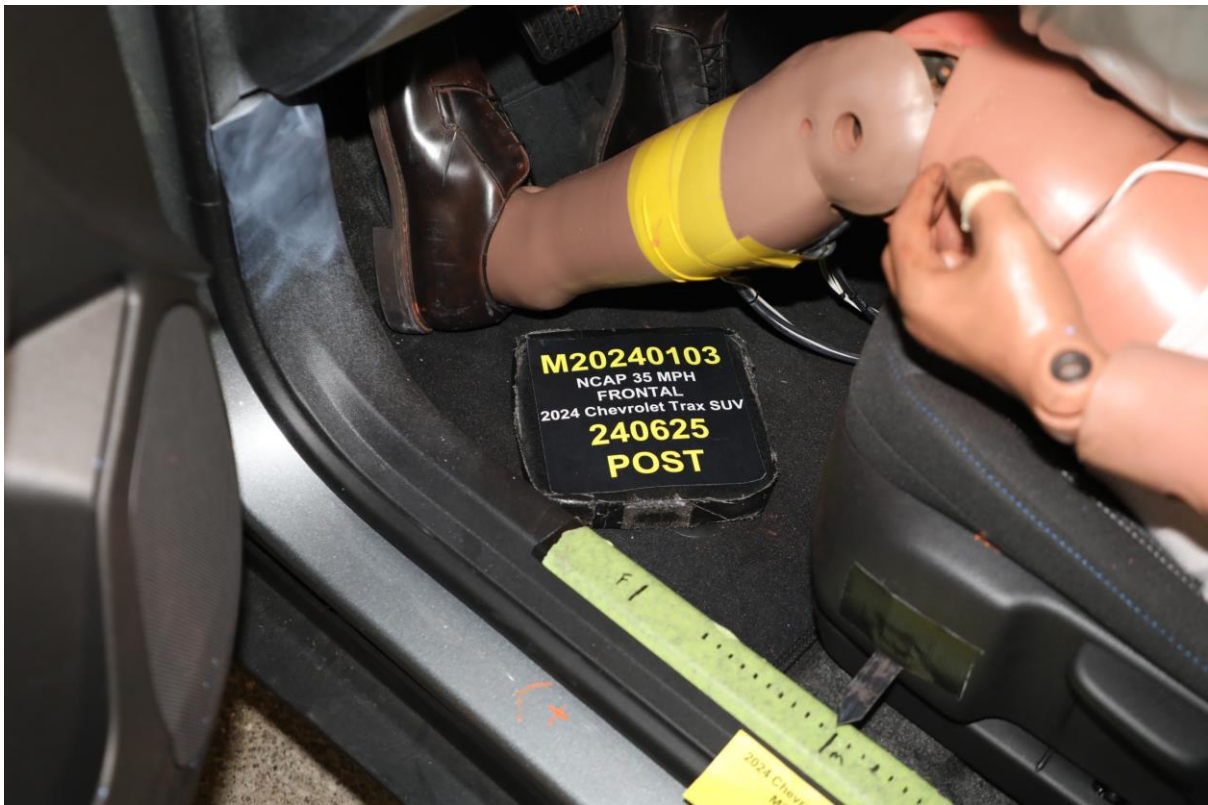
040 Pre-Test View of Belt Buckle and Latch Plate for Driver Dummy



041 Post-Test View of Belt Buckle and Latch Plate for Driver Dummy



042 Pre-Test Driver Dummy Feet



043 Post-Test Driver Dummy Feet



044 Pre-Test Driver's Side Knee Bolster



045 Post-Test Driver's Side Knee Bolster



046 Pre-Test Driver's Side Floorpan



047 Post-Test Driver's Side Floorpan



048 Post-Test Driver Dummy Face



049 Post-Test Driver Dummy Contact with Airbag



050 Post-Test Driver Dummy Contact with Headrest

Intentionally Left Blank



051 Pre-Test View of the Steering Wheel



052 Post-Test View of the Steering Wheel



53 Pre-Test Passenger Dummy Front View



054 Post-Test Passenger Dummy Front View



055 Pre-Test Passenger Dummy Window View



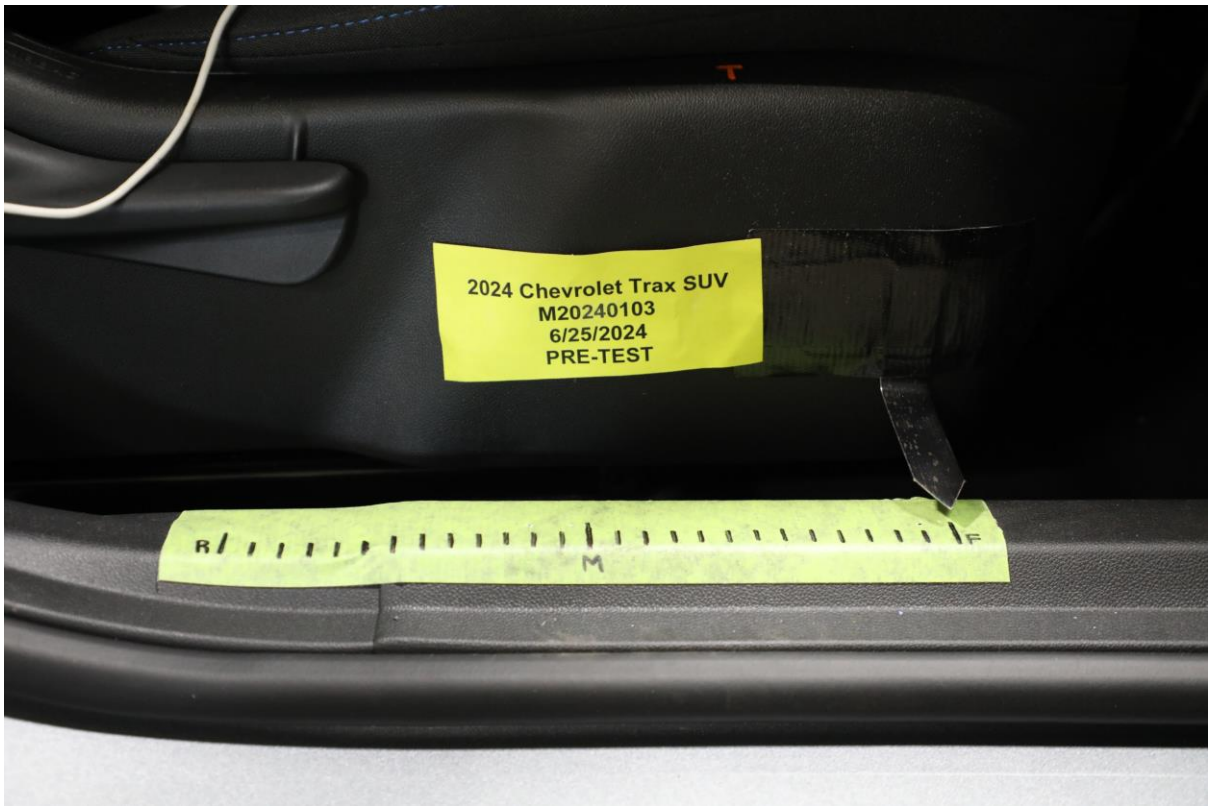
056 Post-Test Passenger Dummy Window View



057 Pre-Test Passenger Dummy and Vehicle Interior View



058 Post-Test Passenger Dummy and Vehicle Interior View



059 Pre-Test Passenger's Seat Fore-Aft Markings



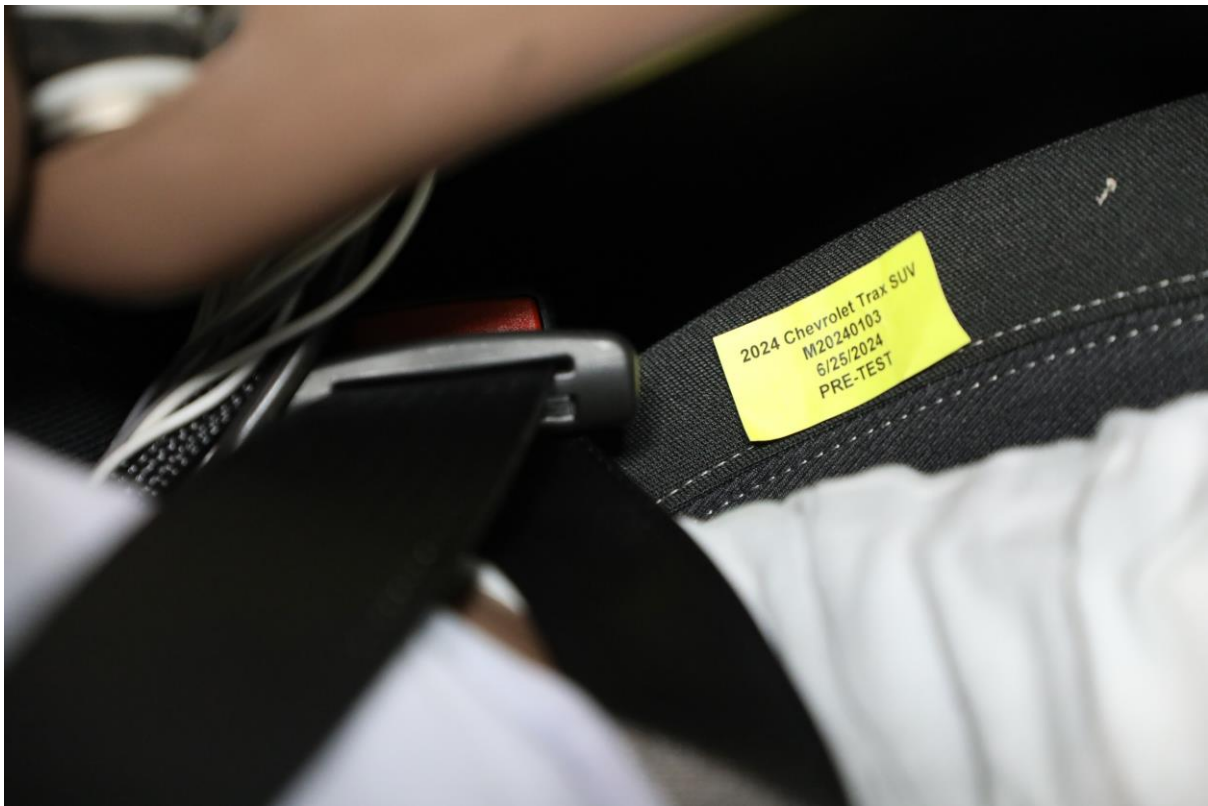
060 Post-Test Passenger's Seat Fore-Aft Markings



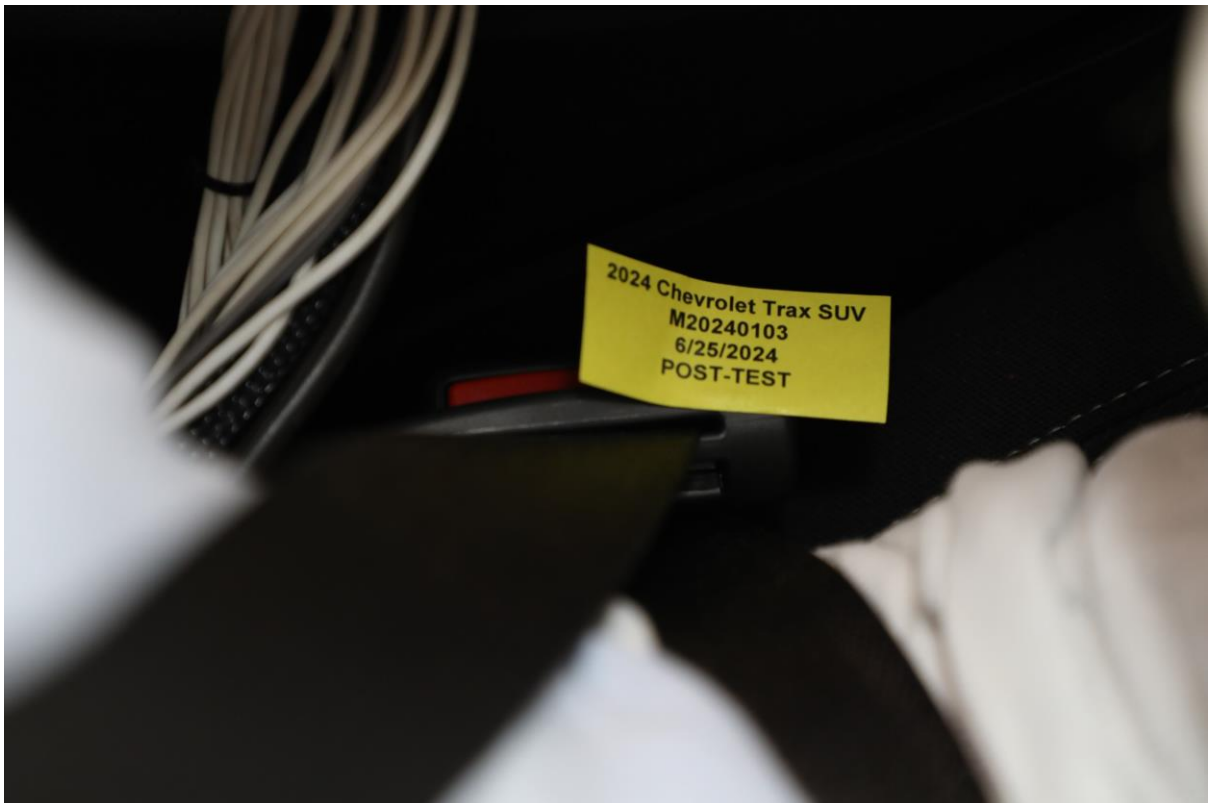
061 Pre-Test View of Belt Anchorage for Passenger Dummy



062 Post-Test View of Belt Anchorage for Passenger Dummy



063 Pre-Test View of Belt Buckle and Latch Plate for Passenger Dummy



064 Post-Test View of Belt Buckle and Latch Plate for Passenger Dummy



065 Pre-Test Passenger Dummy Feet



066 Post-Test Passenger Dummy Feet



067 Pre-Test Passenger's Side Knee Bolster



068 Post-Test Passenger's Side Knee Bolster



069 Pre-Test Passenger's Side Floorpan



070 Post-Test Passenger's Side Floorpan



071 Post-Test Passenger Dummy Face



072 Post-Test Passenger Dummy Contact with Airbag



073 Post-Test Passenger Dummy Contact with Headrest



074 Photograph of Ballast Installed in Vehicle

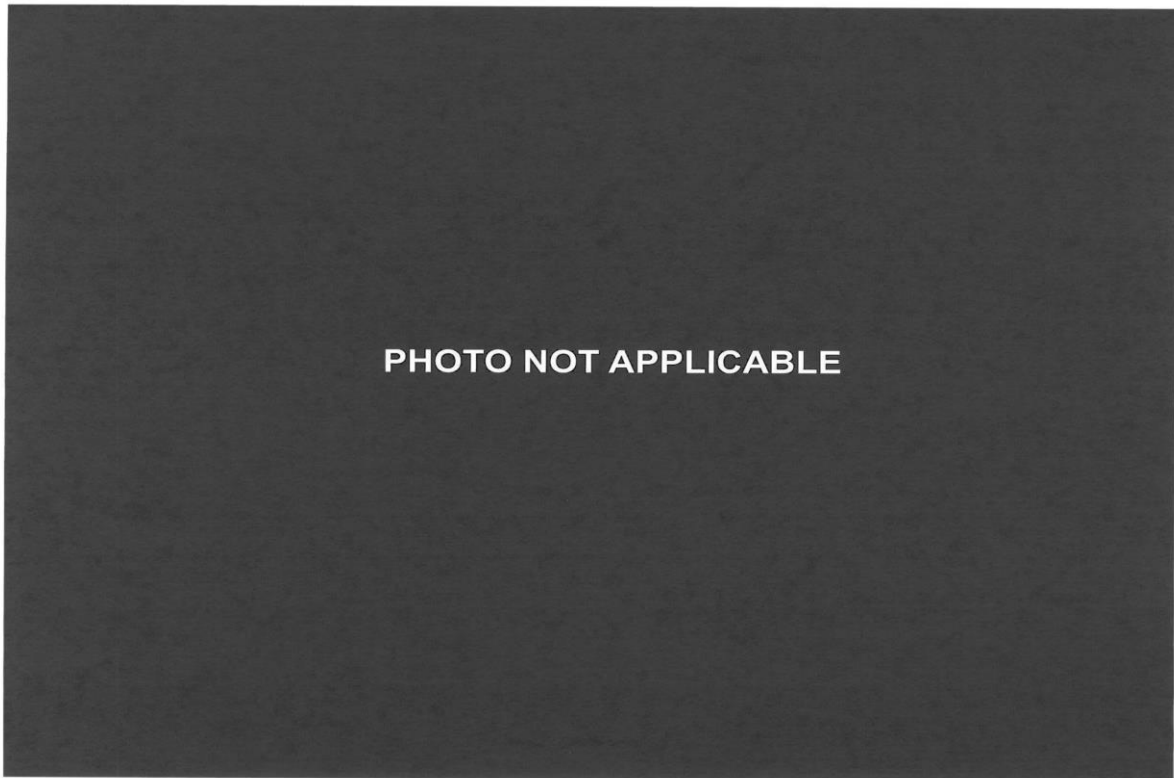


PHOTO NOT APPLICABLE

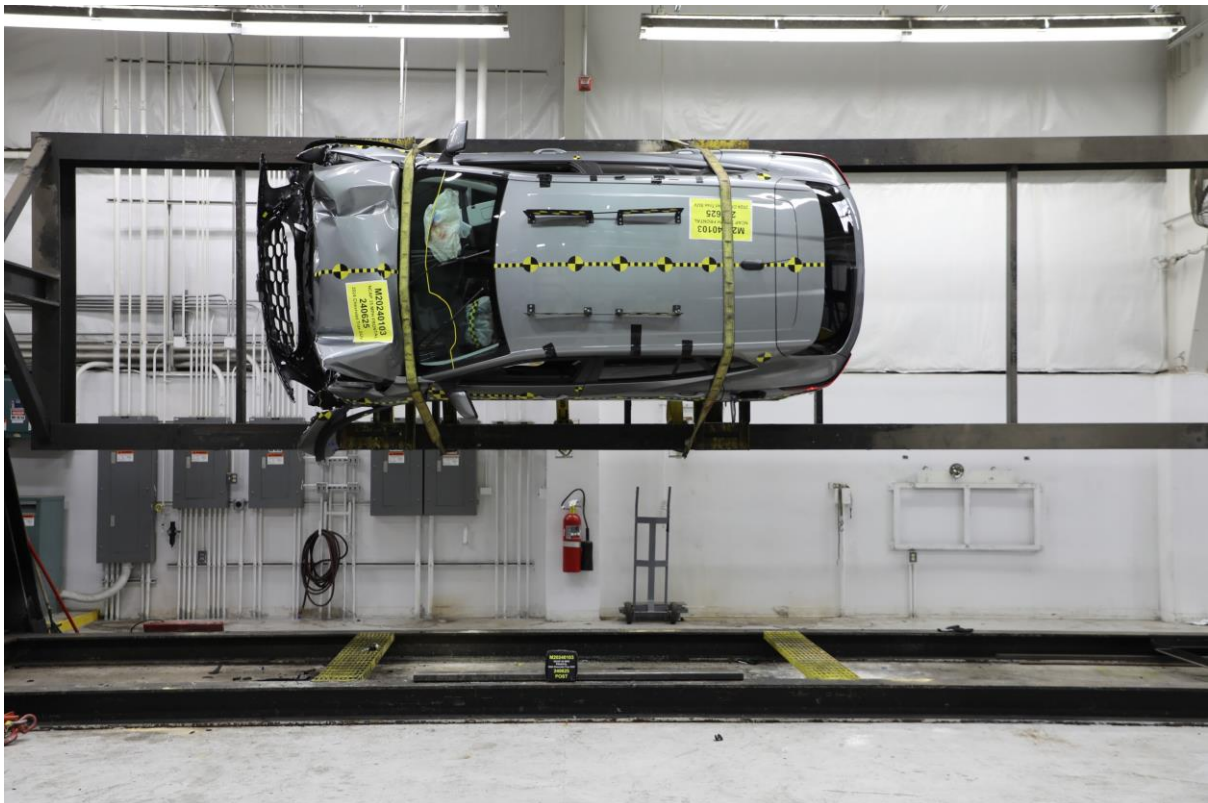
075 Post-Test Stoddard Spillage Location View



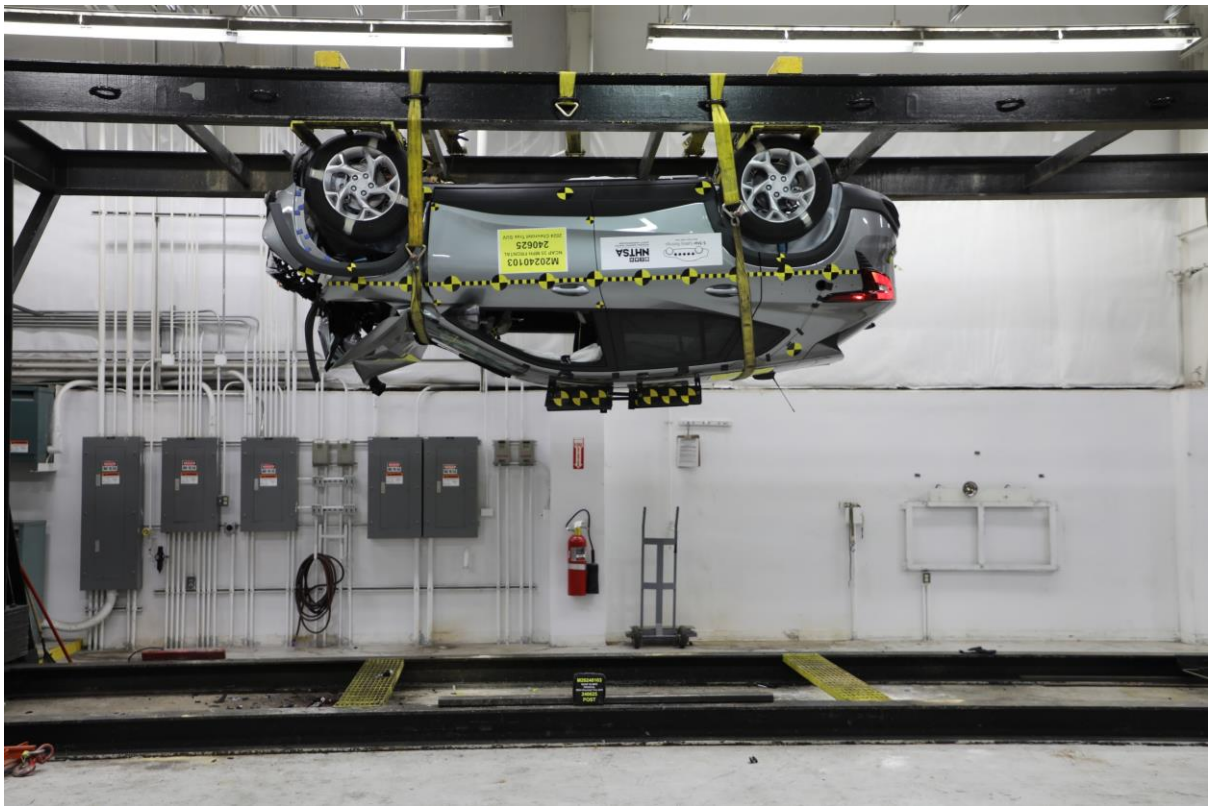
076 Post-Test Speed Trap Read out



077 Vehicle at 0° on Static Rollover Device



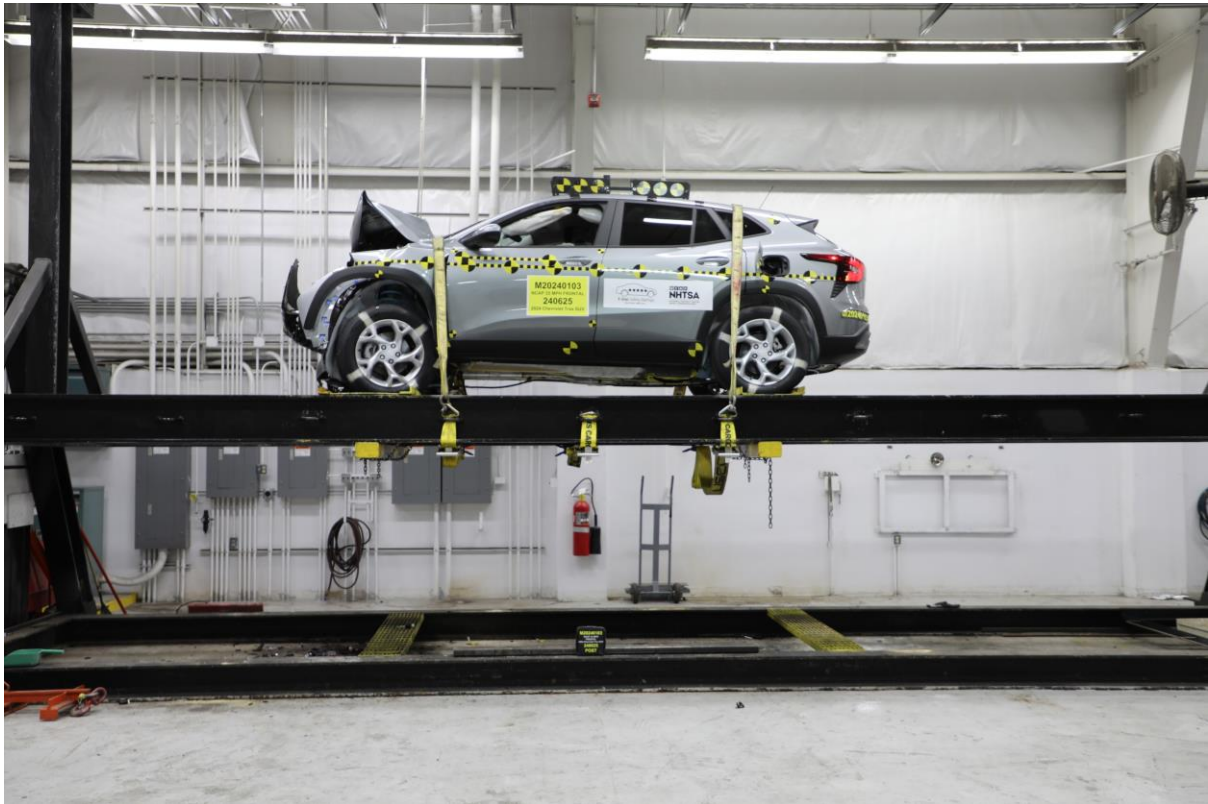
078 Vehicle at 90° on Static Rollover Device



079 Vehicle at 180° on Static Rollover Device



080 Vehicle at 270° on Static Rollover Device



081 Vehicle at 360° on Static Rollover Device



082 2024 Chevrolet Trax SUV Frontal Impact Event



2024 TRAX 1LS

EXTERIOR: STERLING GRAY METALLIC
INTERIOR: JET BLACK / GRAY WITH BLUE

ECOTEC 1.2L TURBO
TRANSMISSION, 6-SPD AUTOMATIC

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STANDARD EQUIPMENT		SYSTEM DIAGONAL COLOR TOUCHSCREEN		4-WAY MANUAL		DEPARTURE WARNING		HEATED DRIVER CONFIDENCE PACKAGE:																							
OWNER BENEFITS • 3 YEAR/50,000 MILE* • BUMPER-TO-BUMPER LIMITED WARRANTY • 5 YEAR/60,000 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		• 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 • SIRIUSXM AUDIO WITH 6-MONTH TRIAL SUBSCRIPTION • STEERING WHEEL CONTROLS, AUDIO / PHONE • AUDIO SYSTEM, 4 SPEAKER INTERIOR • GLASS, DEEP-TINTED, REAR WINDOWS AND LIFTGATE • SEAT ADJUSTER, DRIVER 6-WAY MANUAL • SEAT, REAR 60/40 SPLIT-FOLDING • SEAT ADJUSTER, PASSENGER		• 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		• *FOLLOWING DISTANCE INDICATOR • *INTELLIBEAM • *THEFT DETERRENT SYSTEM • *REAR VISION CAMERA • *TIRE PRESSURE MONITOR SYSTEM (EXCL. SPARE TIRE) MANUFACTURER'S SUGGESTED RETAIL PRICE <table border="1"><tr><td>STANDARD VEHICLE PRICE</td><td>\$20,400.00</td></tr></table> OPTIONS & PRICING OPTIONS INSTALLED BY THE MANUFACTURER MAY REPLACE STANDARD EQUIPMENT (SHEM). <table border="1"><tr><td>LS CONVENIENCE PACKAGE</td><td>995.00</td></tr><tr><td>• WHEELS, 17" SILVER-PAINTED ALUMINUM</td><td></td></tr><tr><td>• REMOTE VEHICLE START</td><td></td></tr><tr><td>• DRIVER & FRONT PASSENGER HEATED SEATS</td><td></td></tr><tr><td>• MIRROR CAPS, BODY COLOR</td><td></td></tr><tr><td>• POWER DUAL OUTSIDE MIRRORS,</td><td></td></tr></table>		STANDARD VEHICLE PRICE	\$20,400.00	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,		<table border="1"><tr><td>TOTAL OPTIONS</td><td>\$1,390.00</td></tr><tr><td>TOTAL VEHICLE & OPTIONS</td><td>\$21,790.00</td></tr><tr><td>DESTINATION CHARGE</td><td>1,095.00</td></tr><tr><td>TOTAL VEHICLE PRICE*</td><td>\$22,885.00</td></tr></table>		TOTAL OPTIONS	\$1,390.00	TOTAL VEHICLE & OPTIONS	\$21,790.00	DESTINATION CHARGE	1,095.00	TOTAL VEHICLE PRICE*	\$22,885.00
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• MIRROR CAPS, BODY COLOR																															
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DESTINATION CHARGE	1,095.00																														
TOTAL VEHICLE PRICE*	\$22,885.00																														

EPA DOT Fuel Economy and Environment	Gasoline Vehicle	GOVERNMENT 5-STAR SAFETY RATINGS	PARTS CONTENT INFORMATION
Fuel Economy TRAX FWD Small station wagons range from 16 to 100 MPG. The best vehicle rates 140 MPG. 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) Best 10 1 6 10 Best Smog Rating (tailpipe only) Best 1 7 10 Best Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 28 MPG and costs \$9,750 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.60 per gallon. MPG is miles per gallon equivalent. Vehicle emissions are a significant cause of climate change and smog. fuel economy.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. onstar.com/chevy FOR VEHICLES IN THIS COUNTRY: U.S./CANADIAN PARTS CONTENT: 2% MAJOR SOURCES OF FOREIGN PARTS CONTENT: KOREA 40% CHINA 19% NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS. FOR THIS VEHICLE: FINAL ASSEMBLY POINT: CHANGWON, KY KOREA COUNTRY OF ORIGIN: ENGINE: MEXICO TRANSMISSION: KOREA UNDER NO CIRCUMSTANCES SHALL SALES CODE BE USED TO RETURN A VEHICLE TO THE MANUFACTURER. VIN: KL77LF21RC176468 REISSUE DEALER TO WHOM DELIVERED: SPORT CHEVROLET COMPANY, LLC 3101 AUTOMOBILE BLVD SILVER SPRING, MD 20904-4999			

083 Monroney Label Photograph

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

No.	List of Data Plots Provided in the Test Report	Page
1	Driver Head X Acceleration vs. Time Primary	B-6
2	Driver Head Y Acceleration vs. Time Primary	B-6
3	Driver Head Z Acceleration vs. Time Primary	B-6
4	Driver Head Resultant Acceleration vs. Time Primary	B-6
5	Driver Chest X Deflection vs. Time	B-7
6	Driver Chest X Acceleration vs. Time Primary	B-8
7	Driver Chest Y Acceleration vs. Time Primary	B-8
8	Driver Chest Z Acceleration vs. Time Primary	B-8
9	Driver Chest Resultant Acceleration vs. Time Primary	B-8
10	Driver Upper Neck Force X vs. Time	B-9
11	Driver Upper Neck Force Z vs. Time	B-9
12	Driver Upper Neck Moment Y vs. Time	B-9
13	Driver Nij vs. Time	B-10
14	Driver Left Femur Force vs. Time	B-11
15	Driver Right Femur Force vs. Time	B-11
16	Passenger Head X Acceleration vs. Time Primary	B-12
17	Passenger Head Y Acceleration vs. Time Primary	B-12
18	Passenger Head Z Acceleration vs. Time Primary	B-12
19	Passenger Head Resultant Acceleration vs. Time Primary	B-12
20	Passenger Chest X Deflection vs. Time	B-13
21	Passenger Chest X Acceleration vs. Time Primary	B-14
22	Passenger Chest Y Acceleration vs. Time Primary	B-14
23	Passenger Chest Z Acceleration vs. Time Primary	B-14
24	Passenger Chest Resultant Acceleration vs. Time Primary	B-14
25	Passenger Upper Neck Force X vs. Time	B-15
26	Passenger Upper Neck Force Z vs. Time	B-15
27	Passenger Upper Neck Moment Y vs. Time	B-15
28	Passenger Nij vs. Time	B-16
29	Passenger Left Femur Force vs. Time	B-17
30	Passenger Right Femur Force vs. Time	B-17

The following additional dummy and vehicle response data can be found in the R & D section of the NHTSA website at: www.nhtsa.gov.

Driver Head Acceleration X Redundant
Driver Head Acceleration Y Redundant
Driver Head Acceleration Z Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver Left Femur Redundant
Driver Right Femur Redundant
Driver Left Upper Tibia Moment X
Driver Left Upper Tibia Moment Y
Driver Left Upper Tibia Force Z
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Upper Tibia Moment X
Driver Right Upper Tibia Moment Y
Driver Right Upper Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Fore Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Right Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z

Driver Head Angular Velocity X
Driver Head Angular Velocity Y
Driver Head Angular Velocity Z
Driver Shoulder Belt
Driver Lap Belt
Passenger Head Acceleration X Redundant
Passenger Head Acceleration Y Redundant
Passenger Head Acceleration Z Redundant
Passenger Upper Neck Force Y
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Z
Passenger Chest X Acceleration Redundant
Passenger Chest Y Acceleration Redundant
Passenger Chest Z Acceleration Redundant
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Left Femur Redundant
Passenger Right Femur Redundant
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Left Upper Tibia Force Z
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z

Passenger Head Angular Velocity X
Passenger Head Angular Velocity Y
Passenger Head Angular Velocity Z
Left Rear Seat Crossmember X
Left Rear Seat Crossmember Z
Passenger Shoulder Belt
Passenger Lap Belt
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Left Rear Seat Crossmember X Redundant
Right Rear Seat Crossmember X Redundant
Vehicle Engine Top X
Vehicle Engine Bottom X
Load Cell Barrier Forces

NHTSA

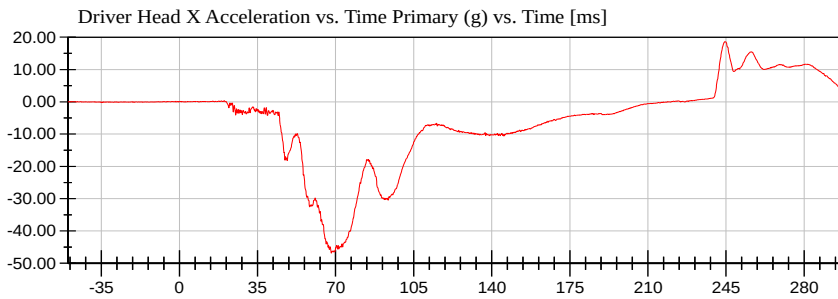
Test Lab: CTF

Test Number: 240625 (M20240103)

Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



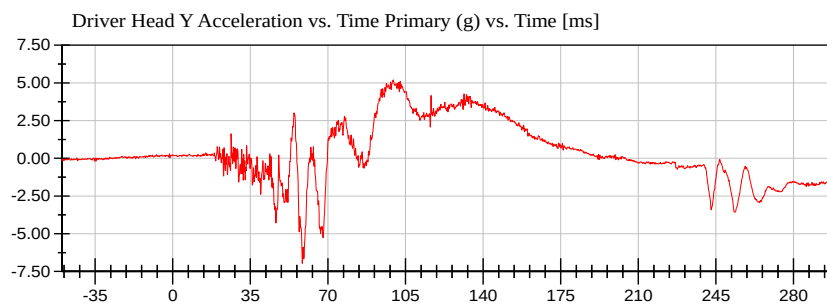
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<Min>

-46.86 g at 68.08 ms

CFC_1000



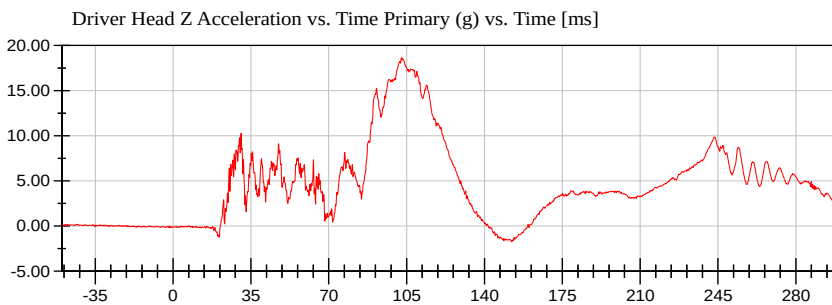
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-6.96 g at 58.48 ms

CFC_1000



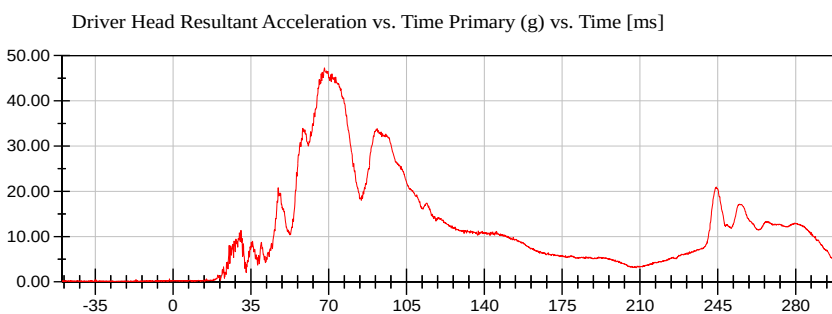
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18.64 g at 102.64 ms

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-1.77 g at 152.24 ms

CFC_1000



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0.03 g at -29.20 ms

Prefiltered_> CFC 1000



NHTSA

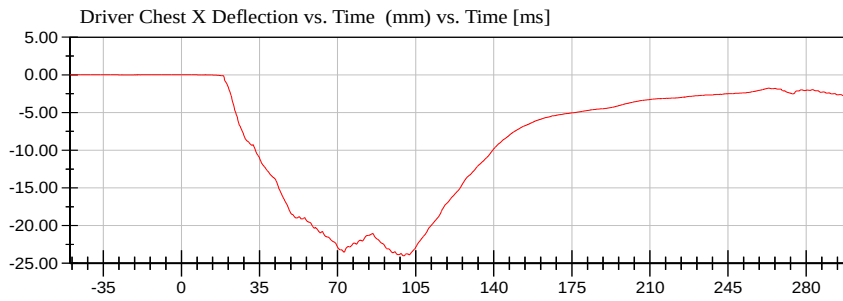
Test Lab: CTF

Test Number: 240625 (M20240103)

Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



<Max>

0.03 mm at -1.20 ms

<Min>

-24.01 mm at 99.68 ms

CFC_600



NHTSA

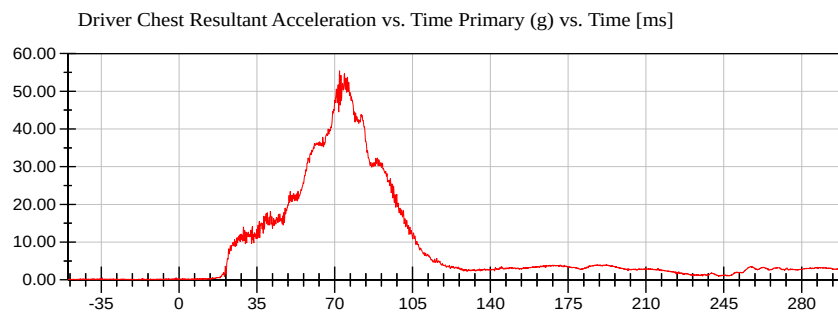
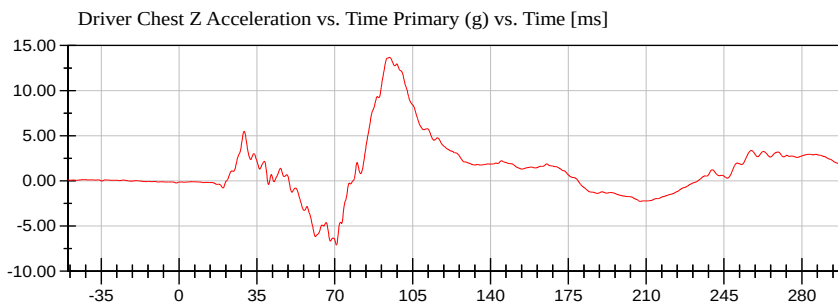
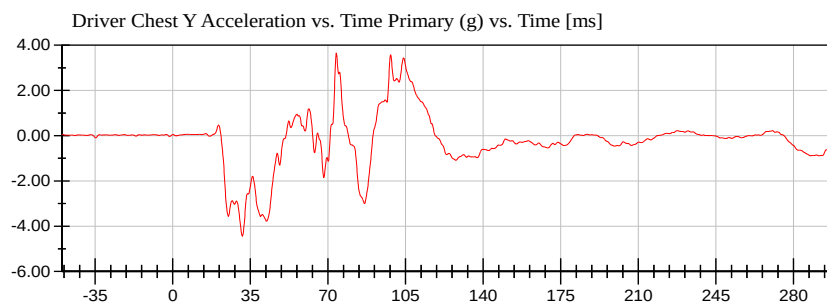
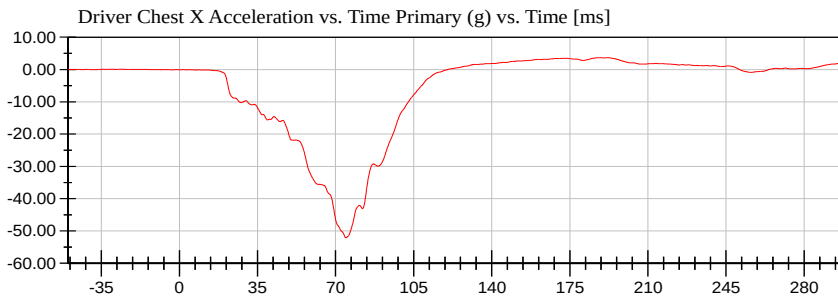
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Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



NHTSA

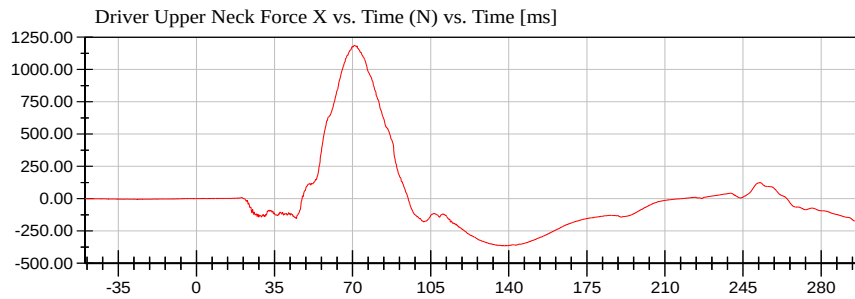
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Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



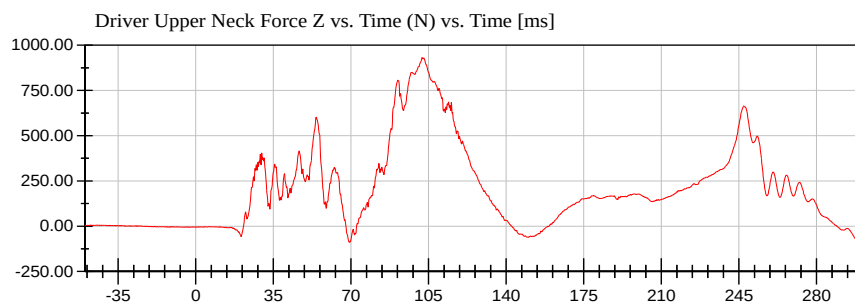
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CFC_1000



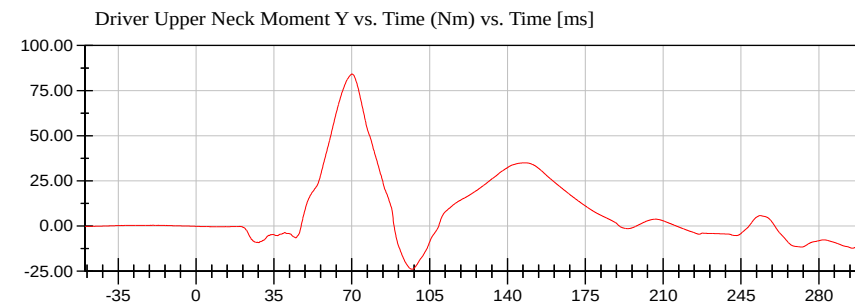
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932.04 N at 102.08 ms

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-89.07 N at 69.28 ms

CFC_1000



<Max>

84.19 Nm at 70.08 ms

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-23.90 Nm at 97.12 ms

CFC_600





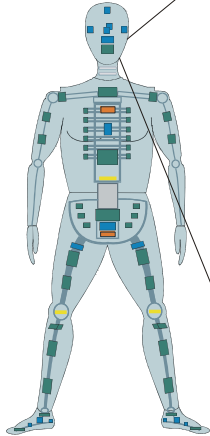
2024 Chevrolet Trax SUV NCAP 35 mph Frontal Impact Neck Injury Predictor (NIJ)

Date: 06/25/2024
Time: 14:55

Customer: NHTSA

Test Number: M20240103

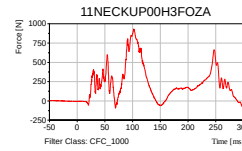
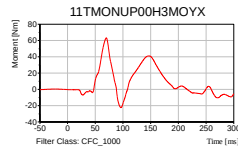
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



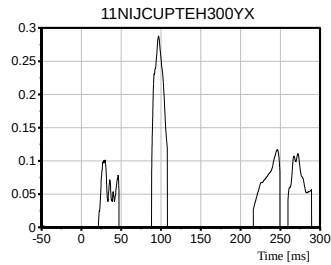
Dummy: HIII 50th Male
Seating Position:

Driver

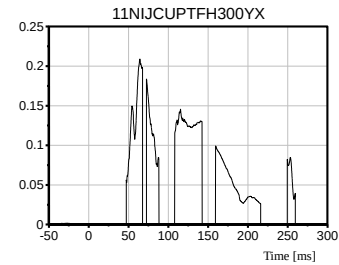
NIJ Source Code: (Fz/Fzc)+(Myc/Myc)



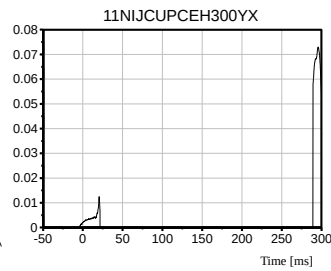
TRC Inc. Test Lab: CTF
Test Number: 240625



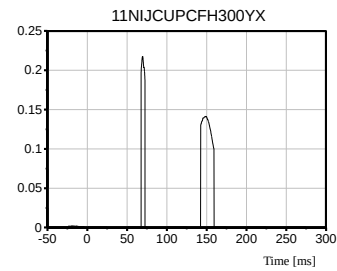
Max [NTE] 0.2879 at 97.04 ms



Max [NTF] 0.2089 at 64.40 ms



Max [NCE] 0.0730 at 295.76 ms



Max [NCF] 0.2175 at 69.68 ms

NHTSA

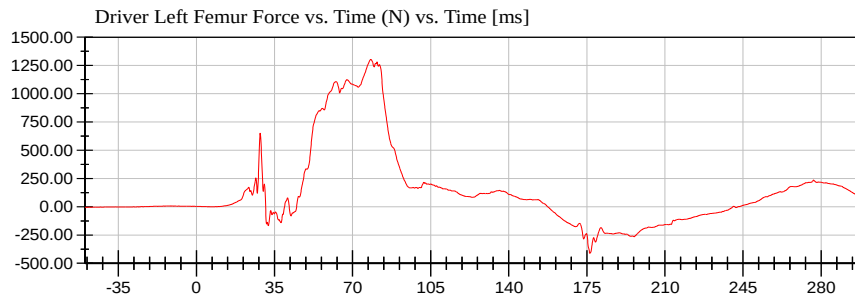
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Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



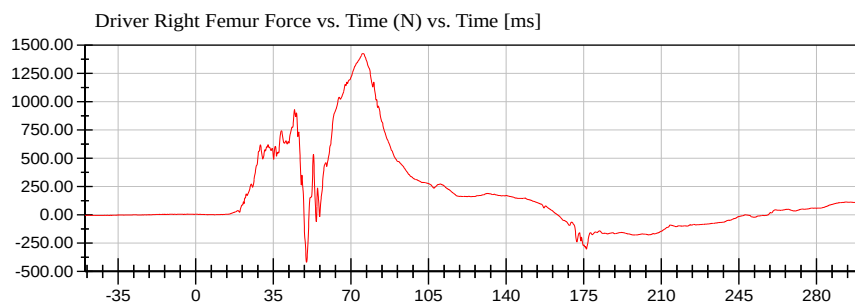
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1,302.70 N at 78.16 ms

<Min>

-412.48 N at 176.32 ms

CFC_600



<Max>

1,425.63 N at 75.36 ms

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-418.66 N at 50.00 ms

CFC_600



NHTSA

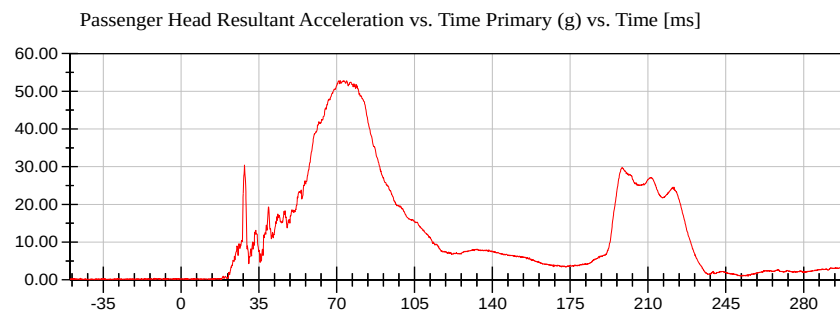
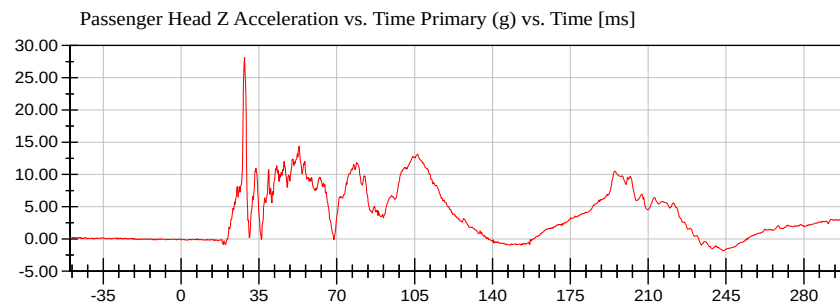
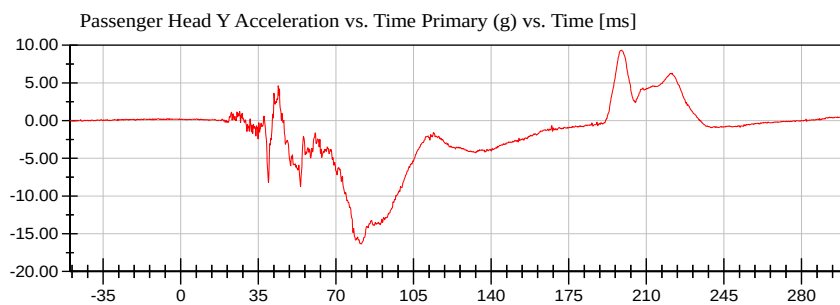
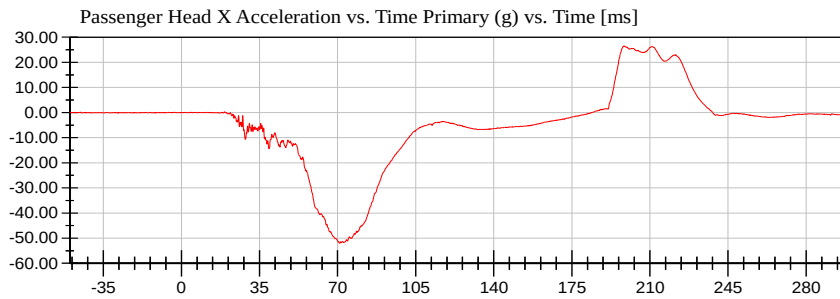
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Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



NHTSA

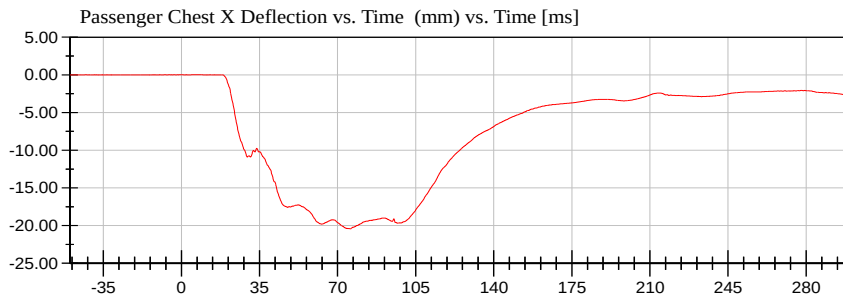
Test Lab: CTF

Test Number: 240625 (M20240103)

Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



<Max>

0.01 mm at -3.28 ms

<Min>

-20.43 mm at 75.76 ms

CFC_600



NHTSA

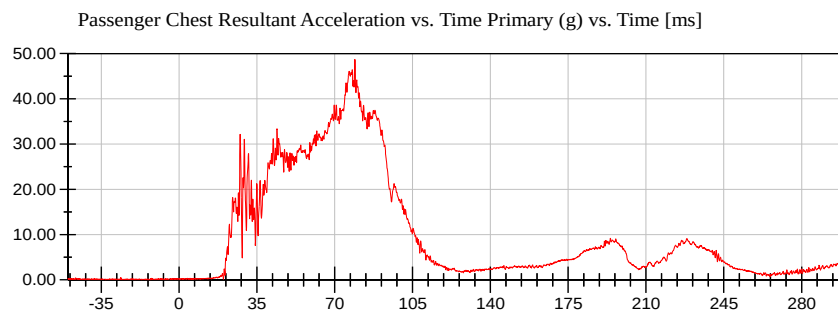
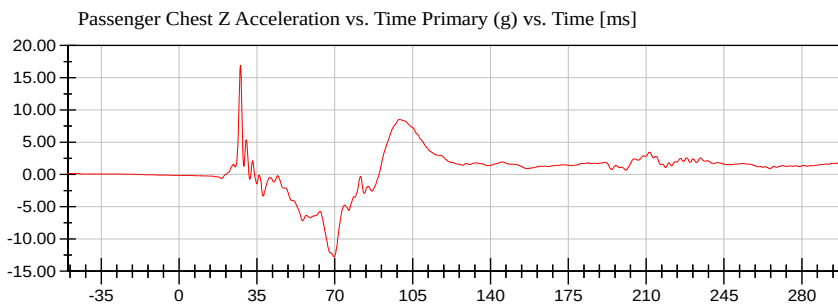
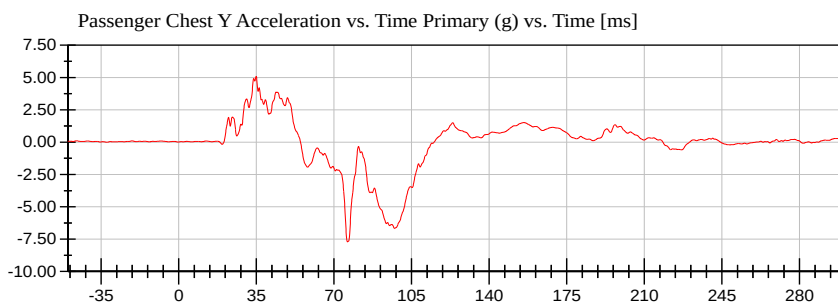
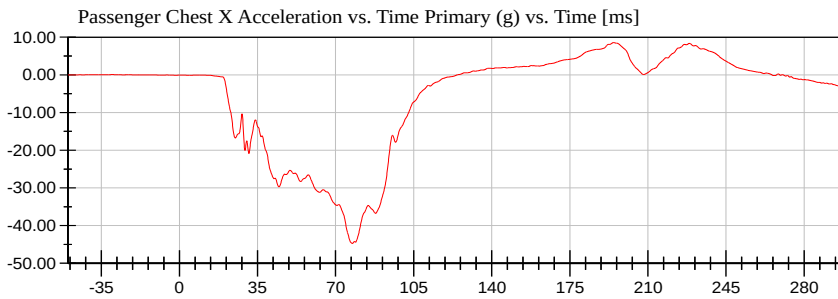
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Test Number: 240625 (M20240103)

Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



NHTSA

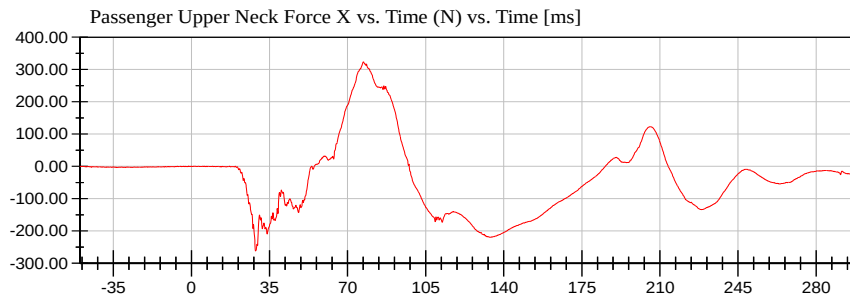
Test Lab: CTF

Test Number: 240625 (M20240103)

Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



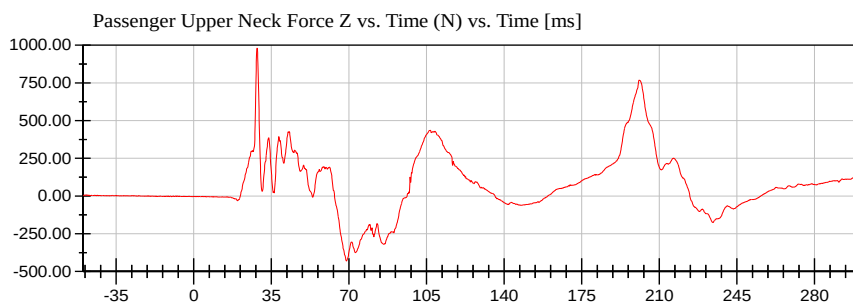
<Max>

323.62 N at 77.04 ms

<Min>

-261.74 N at 28.72 ms

CFC_1000



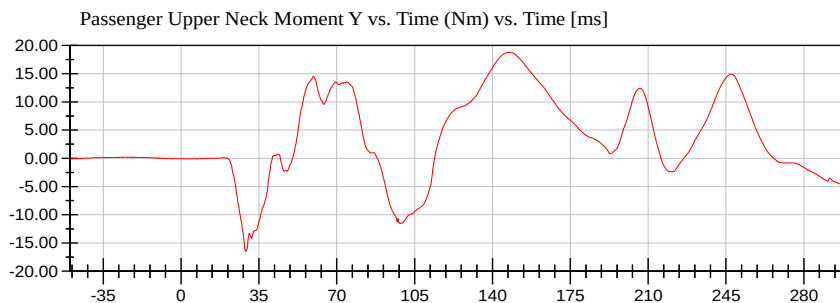
<Max>

980.49 N at 28.56 ms

<Min>

-430.48 N at 68.88 ms

CFC_1000



<Max>

18.79 Nm at 147.28 ms

<Min>

-16.45 Nm at 29.12 ms

CFC_600





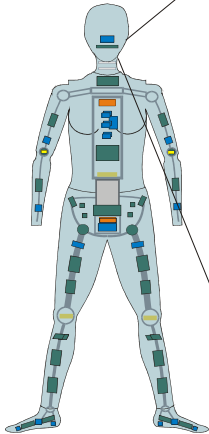
2024 Chevrolet Trax SUV NCAP 35 mph Frontal Impact Neck Injury Predictor (NIJ)

Date: 06/25/2024
Time: 14:55

Customer: NHTSA

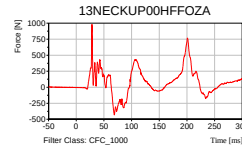
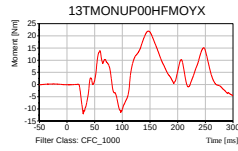
Test Number: M20240103

Test Orientation = Frontal
Fzc(Tension) = 4287
Fzc(Compression) = 3880
Myc(Extension) = 67
Myc(Flexion) = 155

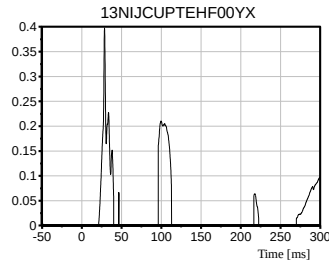


Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

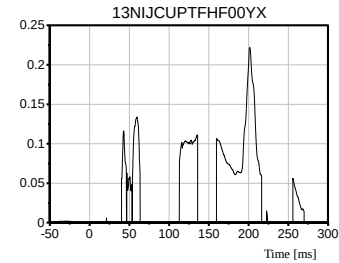
NIJ Source Code: (Fz/Fzc)+(Myc/Myc)



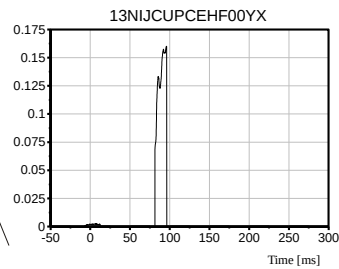
TRC Inc. Test Lab: CTF
Test Number: 240625



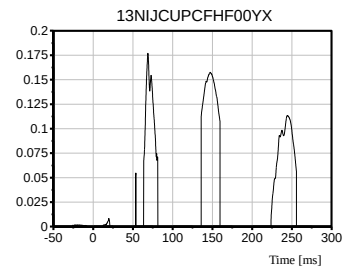
Max [NTE] 0.3974 at 28.64 ms



Max [NTF] 0.2220 at 201.52 ms



Max [NCE] 0.1602 at 95.84 ms



Max [NCF] 0.1770 at 68.88 ms

NHTSA

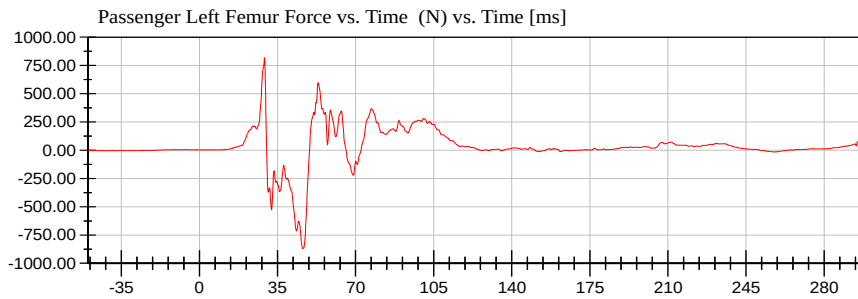
Test Lab: CTF

Test Number: 240625 (M20240103)

Test Date: 06/25/2024

Position #1 Hybrid III Mid-Sized Adult Male Dummy (037)

Position #2 Hybrid III Small Adult Female (DH1659)



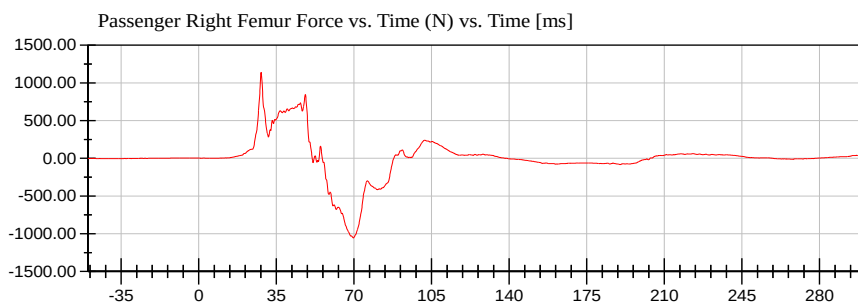
<Max>

818.78 N at 29.20 ms

<Min>

-870.04 N at 46.24 ms

CFC_600



<Max>

1,138.71 N at 28.16 ms

<Min>

-1,055.62 N at 69.76 ms

CFC_600



APPENDIX C
DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA

Pre-Test Calibration Sheets

Driver S/N 037

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 037
Calibration No. 91

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	510	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	337	Yes
J	Elbow Rest Height	190.5 - 210.8	198	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	494	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	223	Yes
P	Foot Length	251.5 - 266.7	264	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	96	Yes
Y	Chest Circumference	970.3 - 1000.8	991	Yes
Z	Waist Circumference	835.7 - 866.1	865	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes



Revised 8/10/12

Report Number: 037_H3F91

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Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 91-1

Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	225.0 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	5.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	< 10 %	0.79 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: N/A

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

06.12.2024 08:38:10 612

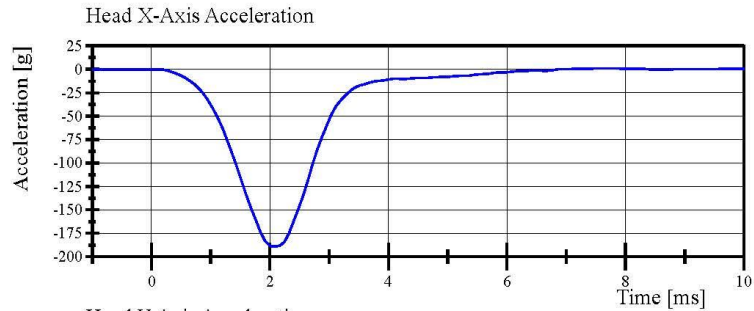


Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 91-1

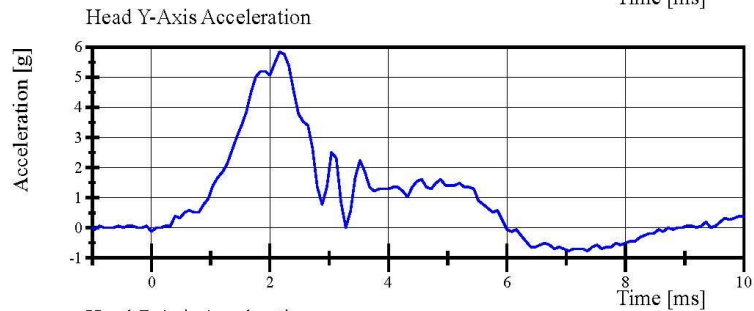
Test Date: 6/12/2024



Filter Class: CFC_1000

Max: 1.2 g at 7.6 ms

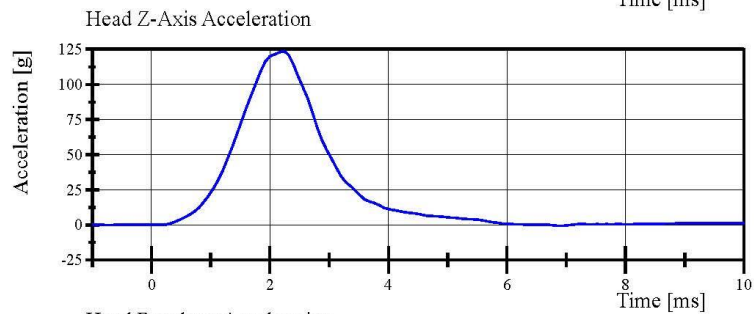
Min: -189.4 g at 2.1 ms



Filter Class: CFC_1000

Max: 5.8 g at 2.2 ms

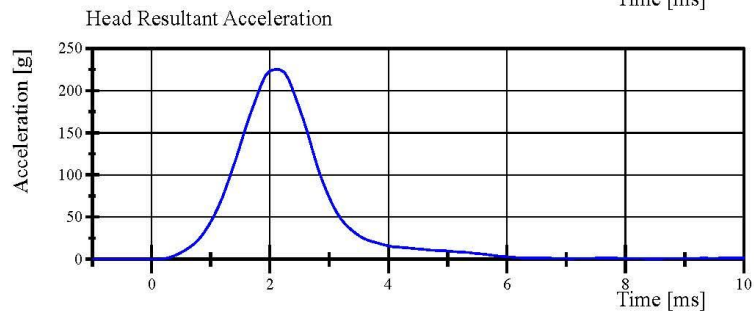
Min: -0.8 g at 7.0 ms



Filter Class: CFC_1000

Max: 123.5 g at 2.2 ms

Min: -0.8 g at 6.9 ms



Filter Class: CFC_1000

Max: 225.0 g at 2.1 ms

Min: 0.0 g at -0.6 ms

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

06.12.2024 08:38:39 612



Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 91-1

Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.975 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	39.6 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.28 g	Yes
at 20ms	(-17.6) - (-22.6) g	-19.95 g	Yes
at 30ms	(-12.5) - (-18.5) g	-16.05 g	Yes
> 30ms	>= (-29.0) g	-16.05 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-66.6 °	Yes
Time of Peak	57 - 64 ms	60.1 ms	Yes
Decay to 0°	113 - 128 ms	119.7 ms	Yes
Total Neck Occipital Condyles Moment Peak	88.1 - 108.4 N·m	101.89 N·m	Yes
Time of Peak	47 - 58 ms	52.7 ms	Yes
Decay to 0 N·m	97 - 107 ms	99.9 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

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

06.12.2024 08:51:42 1865

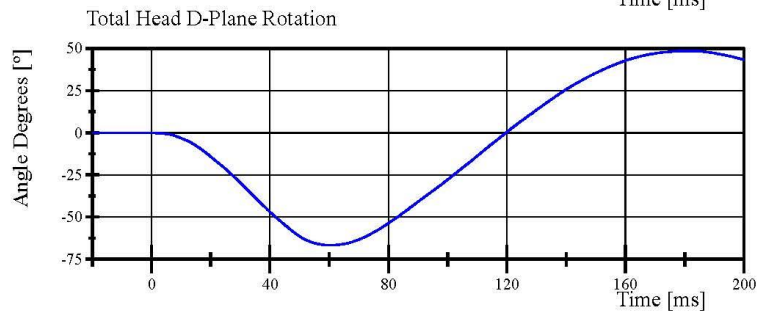
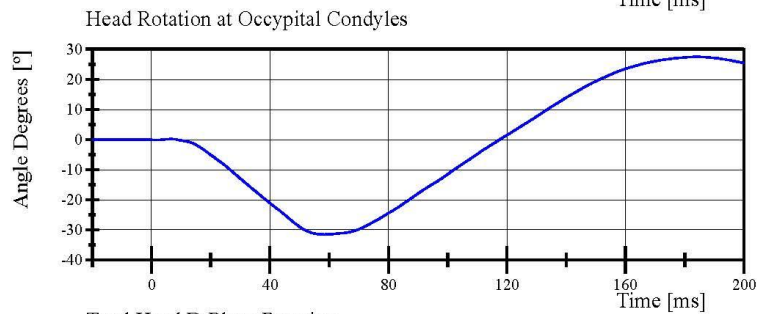
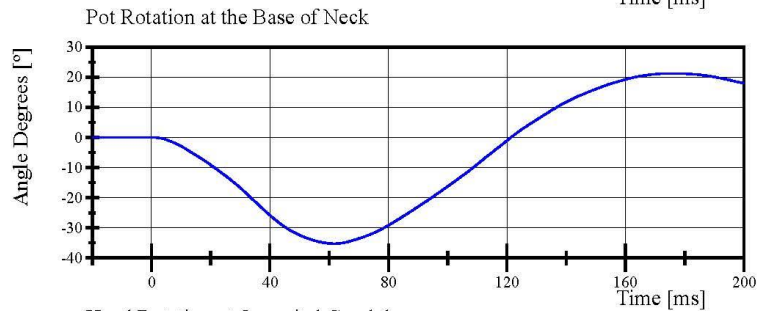
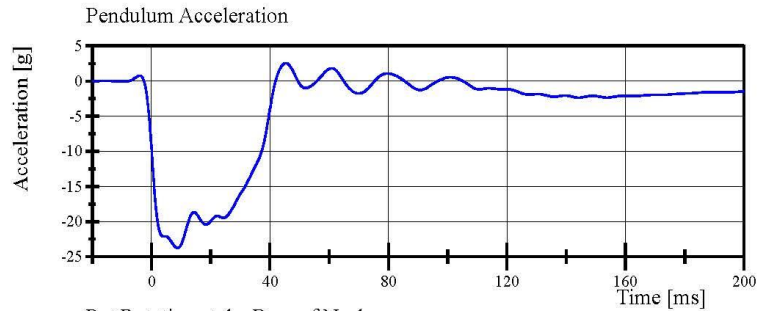


Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 91-1

Test Date: 6/12/2024



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

06.12.2024 08:52:41 1865

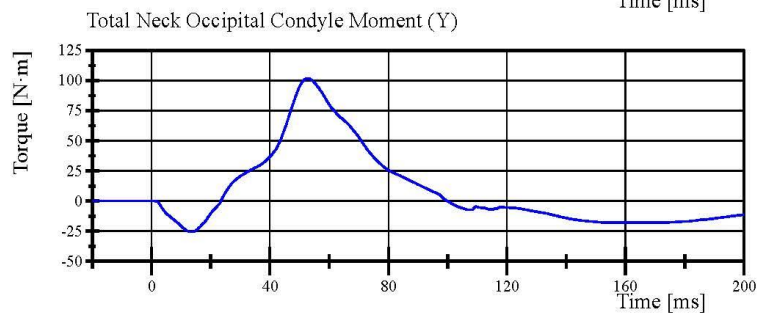
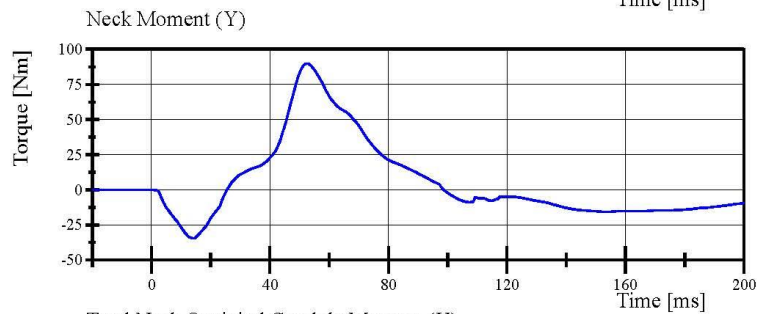
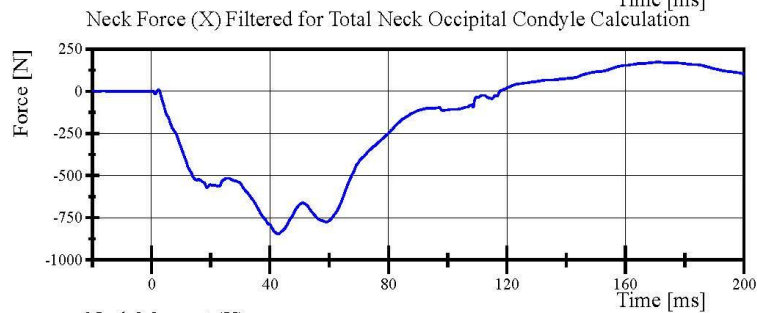
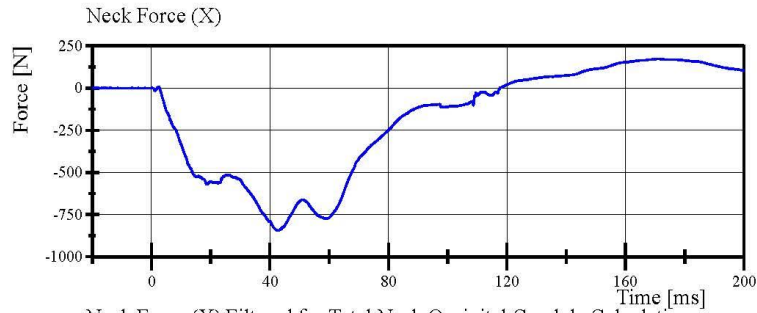


Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 91-1

Test Date: 6/12/2024



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

06.12.2024 08:52:42 1865



Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 91-1

Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.009 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	40.0 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.87 g	Yes
at 20ms	14.0 - 19.0 g	16.23 g	Yes
at 30ms	11.0 - 16.0 g	14.57 g	Yes
> 30ms	<= 22.0 g	14.97 g	Yes
Total Head D-Plane Rotation Peak	81 - 106 °	93.9 °	Yes
Time of Peak	72 - 82 ms	77.6 ms	Yes
Decay to 0°	147 - 174 ms	159.3 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-52.9) - (-80) N·m	-68.59 N·m	Yes
Time of Peak	65 - 79 ms	71.9 ms	Yes
Decay to 0 N·m	120 - 148 ms	142.5 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

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

06.12.2024 09:22:23 2010

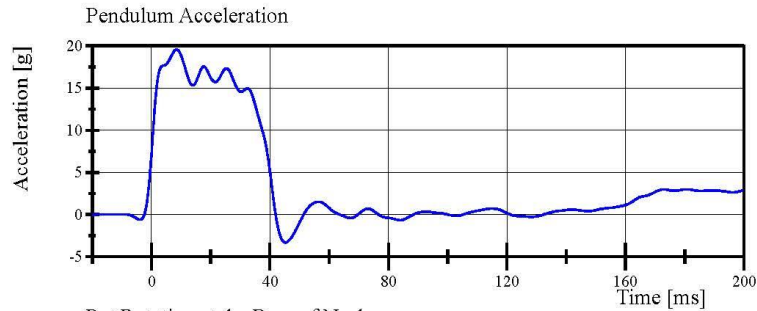


Transportation Research Center Inc.

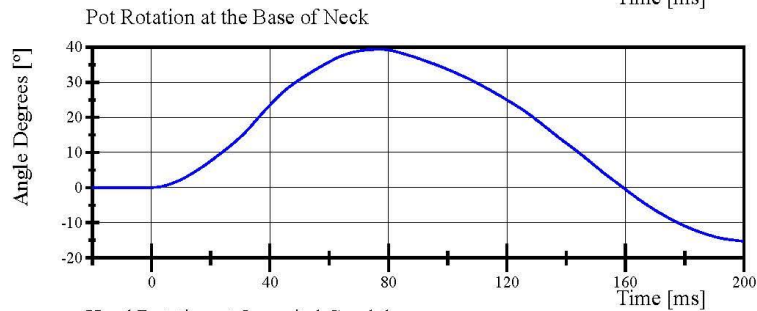
Neck Extension

HIII 50th Serial No. 037 Certification No. 91-1

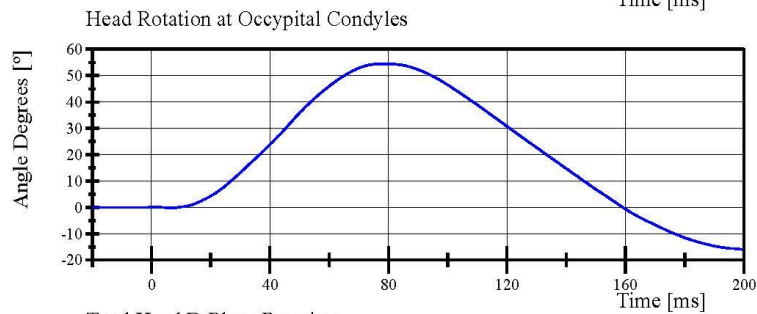
Test Date: 6/12/2024



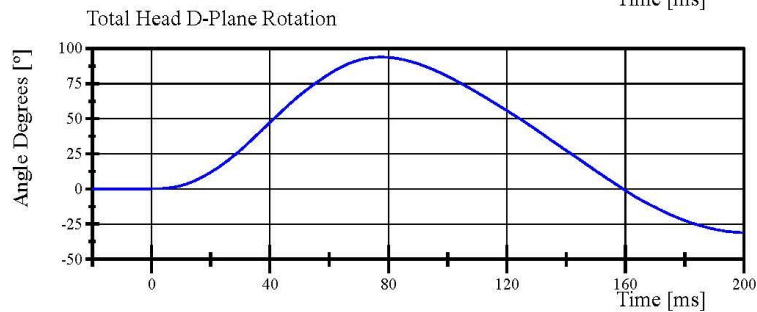
Filter Class: CFC_60
Max: 19.6 g at 8.5 ms
Min: -3.3 g at 45.2 ms



Filter Class: CFC_60
Max: 39.4 ° at 77.1 ms
Min: -15.3 ° at 199.5 ms



Filter Class: CFC_60
Max: 54.5 ° at 78.2 ms
Min: -15.9 ° at 199.5 ms



Filter Class: CFC_60
Max: 93.9 ° at 77.6 ms
Min: -31.2 ° at 199.5 ms

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

06.12.2024 09:22:59 2010

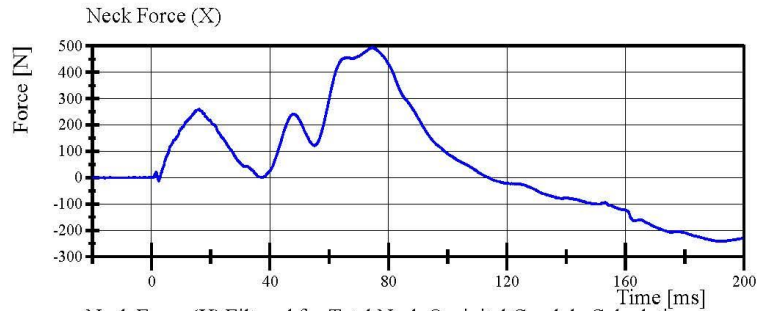


Transportation Research Center Inc.

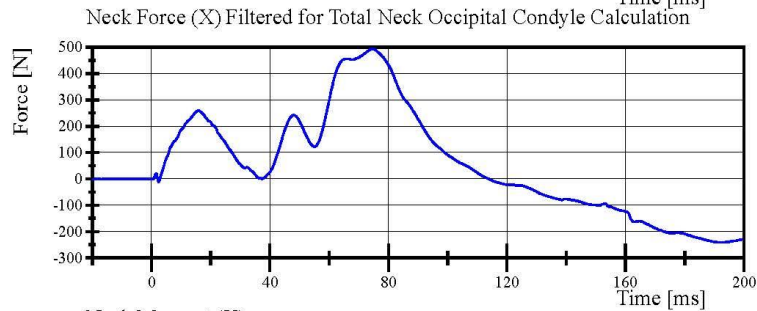
Neck Extension

HIII 50th Serial No. 037 Certification No. 91-1

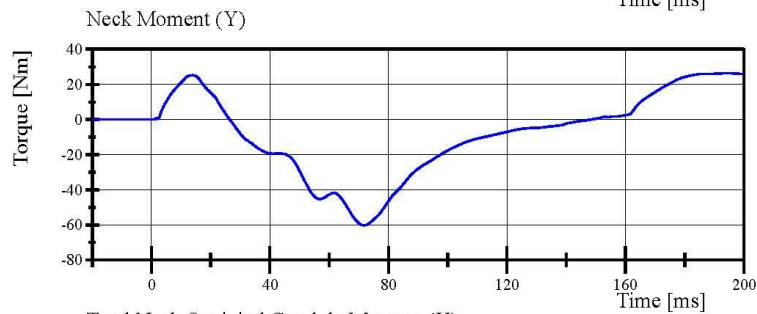
Test Date: 6/12/2024



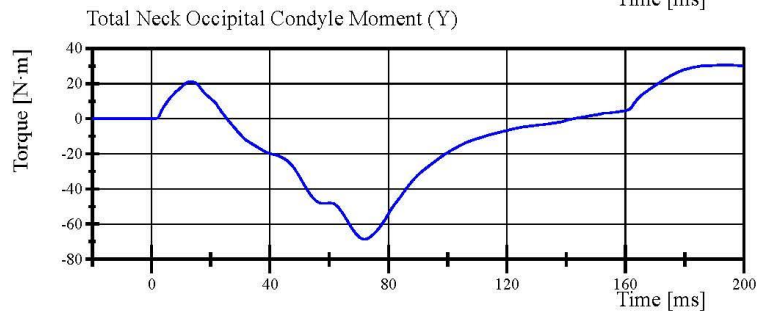
Filter Class: CFC_1000
Max: 493.3 N at 74.3 ms
Min: -241.6 N at 192.7 ms



Filter Class: CFC_600
Max: 493.2 N at 74.5 ms
Min: -241.4 N at 192.8 ms



Filter Class: CFC_600
Max: 26.3 Nm at 194.1 ms
Min: -60.2 Nm at 71.7 ms



Filter Class: Without_(Constan
Max: 30.6 N·m at 193.0 ms
Min: -68.6 N·m at 71.9 ms

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

06.12.2024 09:22:59 2010



Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 037 Certification No. 91-1

Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.612 m/s	Yes
Probe Force Peak	(-5,160) - (-5,894) N	-5,508.9 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-63.70 mm	Yes
Internal Hysteresis	69 - 85 %	73.4 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: EX0700

Rib Set S/N: 10362

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

06.12.2024 13:14:58 391

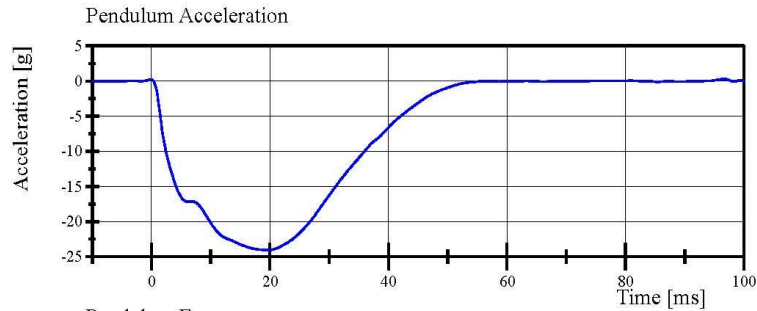


Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 037 Certification No. 91-1

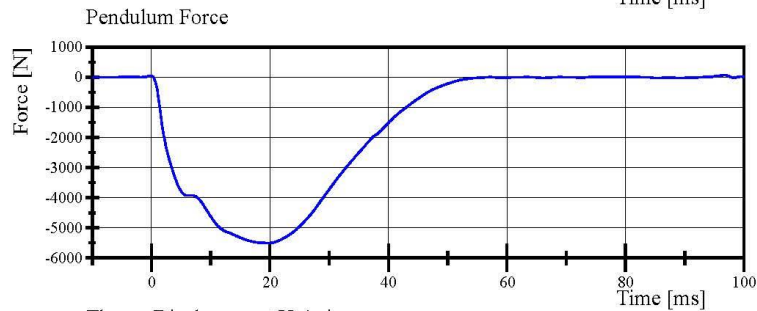
Test Date: 6/12/2024



Filter Class: CFC_180

Max: 0.3 g at 96.7 ms

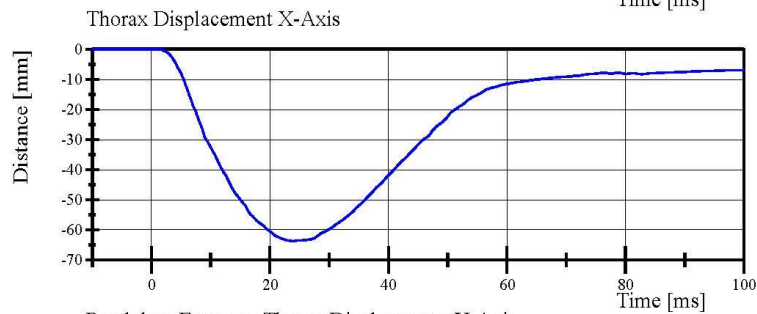
Min: -24.0 g at 19.7 ms



Filter Class: CFC_180

Max: 72.8 N at 96.7 ms

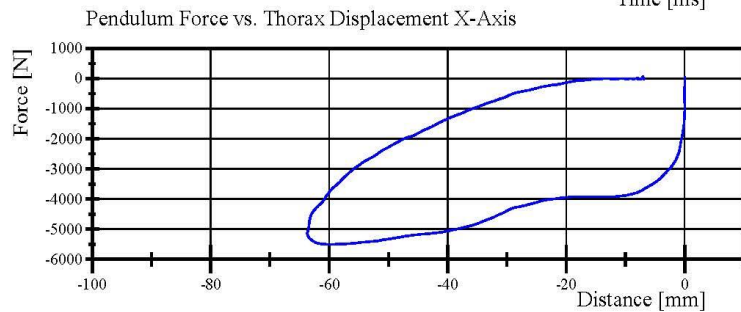
Min: -5,508.9 N at 19.7 ms



Filter Class: CFC_600

Max: 0.0 mm at -2.9 ms

Min: -63.7 mm at 23.9 ms



Filter Class: CFC_180

Max: 72.8 N at -7.0 mm

Min: -5,508.9 N at -60.0 mm

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

06.12.2024 13:18:31 391



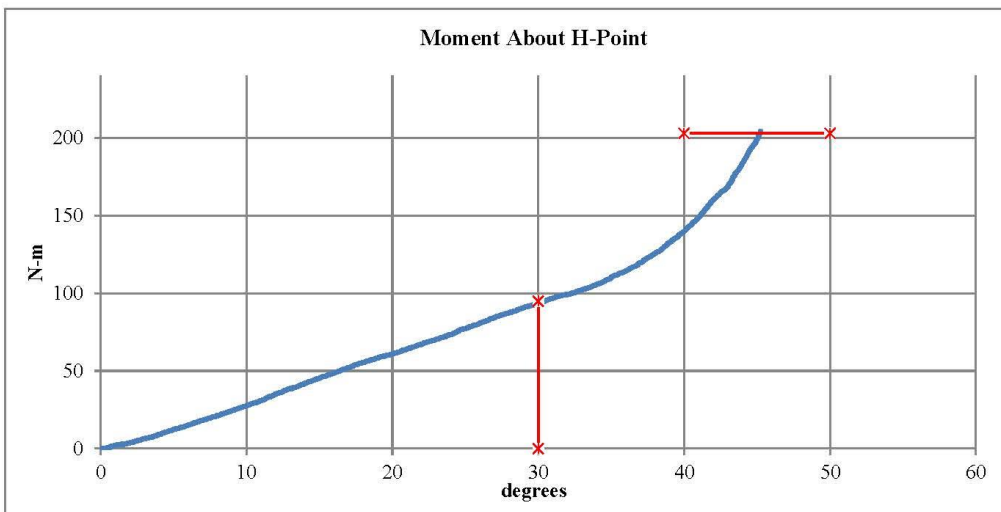
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

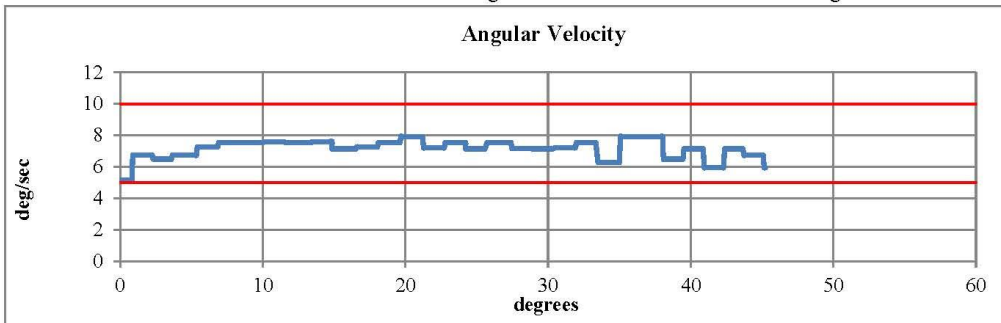


Serial Number: 037 Date: 12-Jun-2024
Side Tested: Left Hip Time: 10:17
Test Number: 1

TEST PARAMETER	SPECIFICATION			TEST RESULTS		
Temperature	18.9	-	25.6	21.1	°C	Pass
Humidity	10	-	70	45	%	Pass
Moment at 30°	0	≤	94.9	93.65	N-m	Pass
Angle at 203 Nm	40	-	50	45.24	deg	Pass
Average Velocity	5	-	10	7.16	deg/sec	Pass



Max: 7.93 deg/sec Min: 5.16 deg/sec



Comments: Pelvis S/N: EU6859

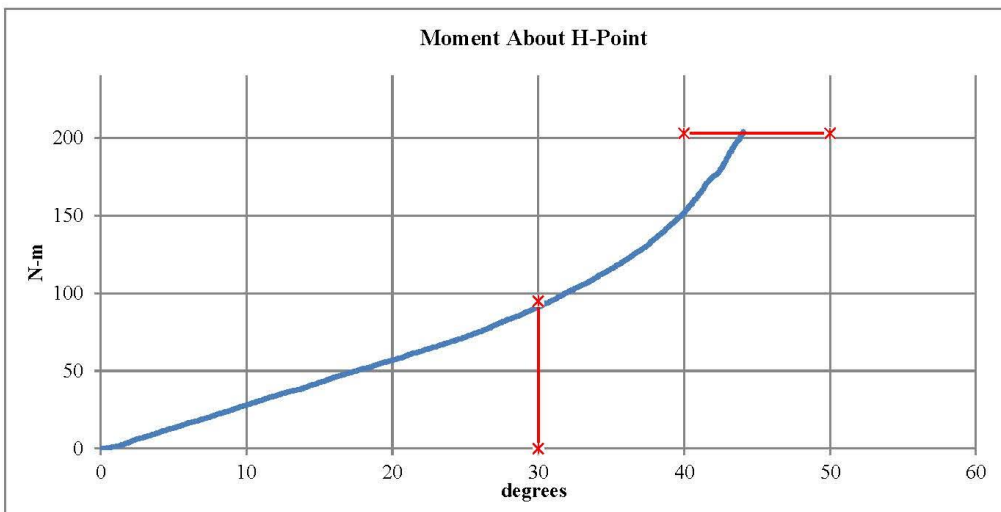
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

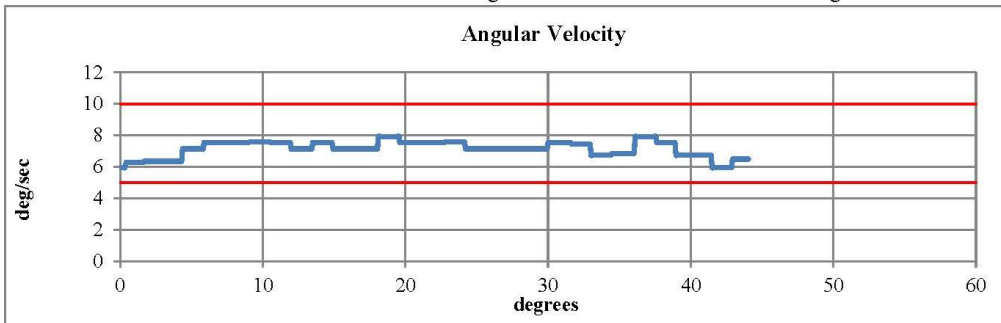


Serial Number: 037 Date: 12-Jun-2024
Side Tested: Right Hip Time: 10:46
Test Number: 1

TEST PARAMETER	SPECIFICATION		TEST RESULTS		
Temperature	18.9	- 25.6	21.3	°C	Pass
Humidity	10	- 70	45	%	Pass
Moment at 30°	0	≤ 94.9	90.92	N-m	Pass
Angle at 203 Nm	40	- 50	44.05	deg	Pass
Average Velocity	5	- 10	7.14	deg/sec	Pass



Max: 7.93 deg/sec Min: 5.95 deg/sec



Comments: Pelvis S/N: EU6859

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 91-1
Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,496.38 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 2672

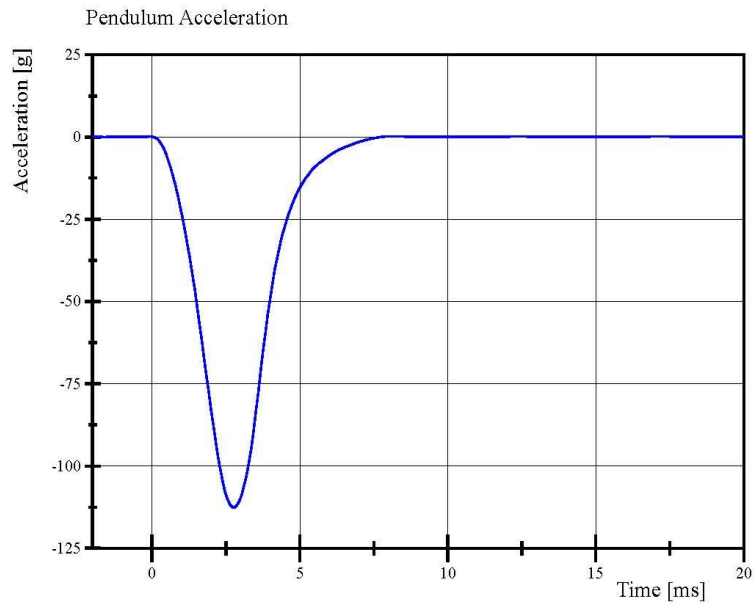
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

06.12.2024 09:57:16 1748

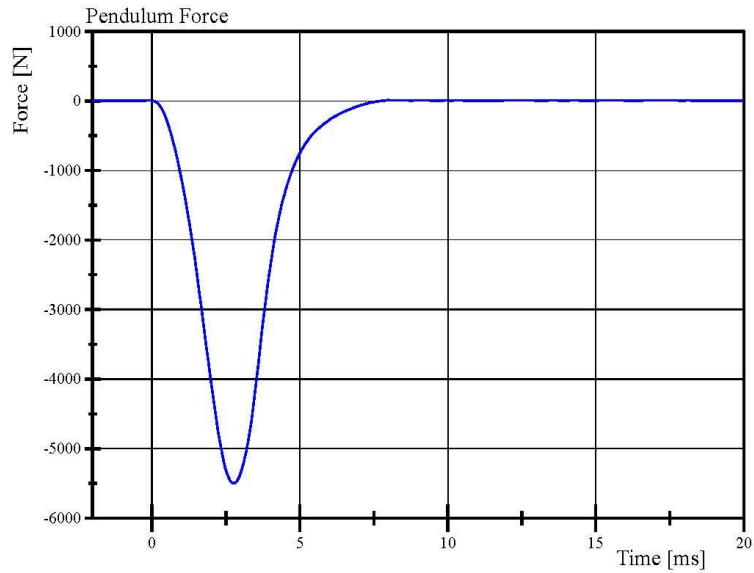


Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 91-1
Test Date: 6/12/2024



Filter Class: CFC_600
Max: 0.2 g at 8.0 ms
Min: -112.5 g at 2.8 ms



Filter Class: CFC_600
Max: 8.1 N at 8.0 ms
Min: -5,496.4 N at 2.8 ms

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

06.12.2024 09:58:09 1748



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 91-1
Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,365.52 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 1248

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

06.12.2024 10:03:01 1743

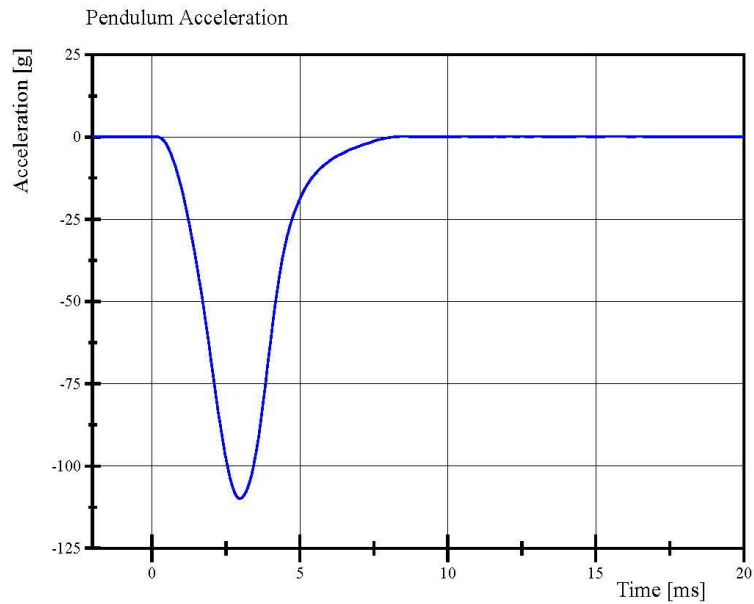


Report Number: 037_H3F91

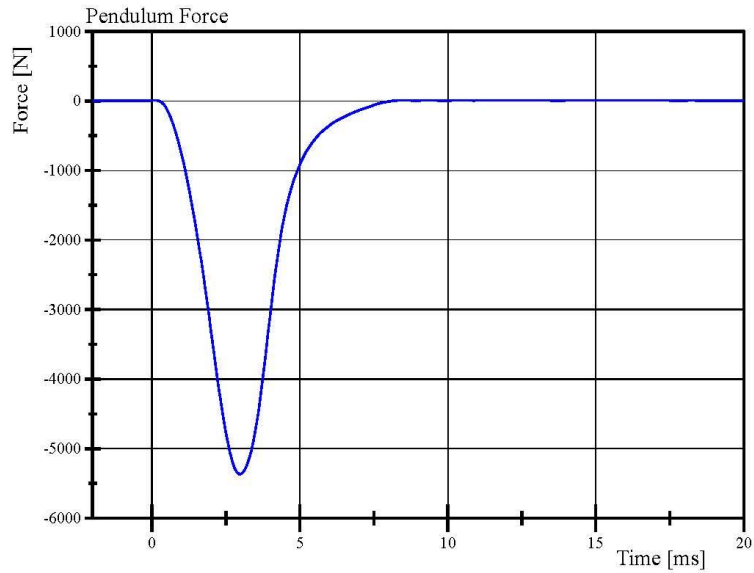
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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 91-1
Test Date: 6/12/2024



Filter Class: CFC_600
Max: 0.2 g at 15.9 ms
Min: -109.9 g at 3.0 ms



Filter Class: CFC_600
Max: 7.9 N at 15.9 ms
Min: -5,365.5 N at 3.0 ms

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

06.12.2024 10:03:26 1743



Post-Test Calibration Sheets

Driver S/N 037

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 037
Calibration No. 92

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	881	Yes
B	Shoulder Pivot Height	505.5 - 520.7	510	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	337	Yes
J	Elbow Rest Height	190.5 - 210.8	198	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	494	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	223	Yes
P	Foot Length	251.5 - 266.7	264	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	96	Yes
Y	Chest Circumference	970.3 - 1000.8	991	Yes
Z	Waist Circumference	835.7 - 866.1	865	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes



Revised 8/10/12

Report Number: 037_H3F92

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Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 92-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	232.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	10.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	< 10 %	3.64 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: N/A

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

06.26.2024 08:49:15 615

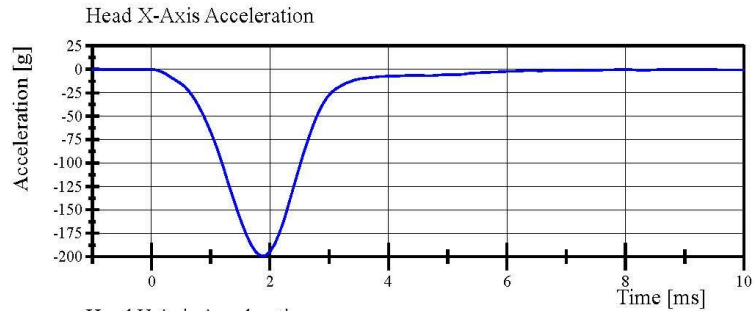


Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 92-1

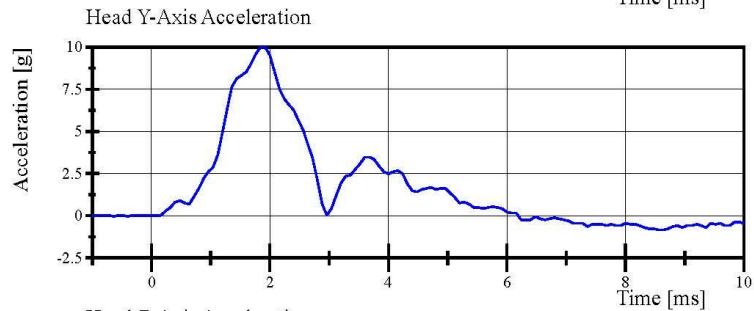
Test Date: 6/26/2024



Filter Class: CFC_1000

Max: 0.1 g at -0.9 ms

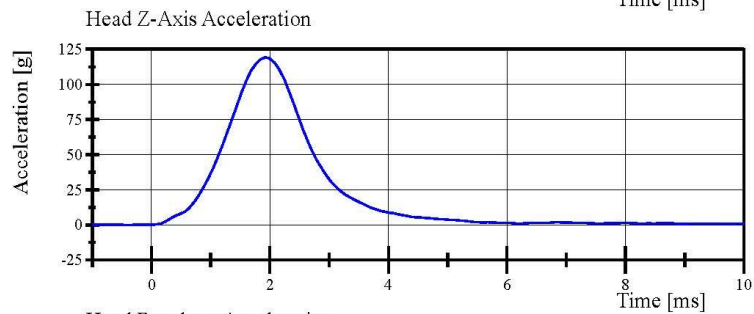
Min: -199.1 g at 1.9 ms



Filter Class: CFC_1000

Max: 10.0 g at 1.8 ms

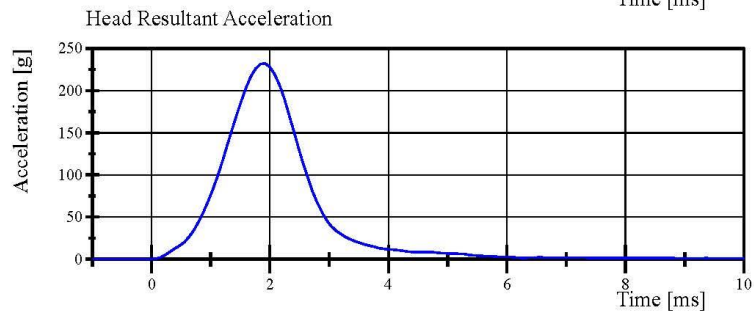
Min: -0.8 g at 8.6 ms



Filter Class: CFC_1000

Max: 119.2 g at 1.9 ms

Min: -0.1 g at -0.4 ms



Filter Class: CFC_1000

Max: 232.3 g at 1.9 ms

Min: 0.0 g at -0.8 ms

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

06.26.2024 08:49:41 615



Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 92-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.979 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	36.7 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.05 g	Yes
at 20ms	(-17.6) - (-22.6) g	-21.38 g	Yes
at 30ms	(-12.5) - (-18.5) g	-15.84 g	Yes
> 30ms	>= (-29.0) g	-15.84 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-73.1 °	Yes
Time of Peak	57 - 64 ms	59.6 ms	Yes
Decay to 0°	113 - 128 ms	119.3 ms	Yes
Total Neck Occipital Condyles Moment Peak	88.1 - 108.4 N·m	100.19 N·m	Yes
Time of Peak	47 - 58 ms	50.0 ms	Yes
Decay to 0 N·m	97 - 107 ms	97.5 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

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

06.26.2024 09:04:00 1864

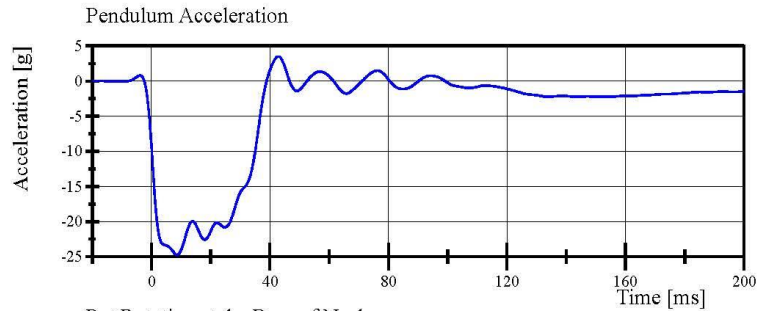


Transportation Research Center Inc.

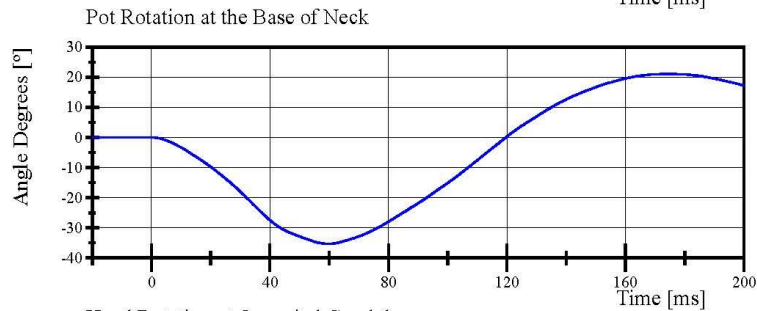
Neck Flexion

HIII 50th Serial No. 037 Certification No. 92-1

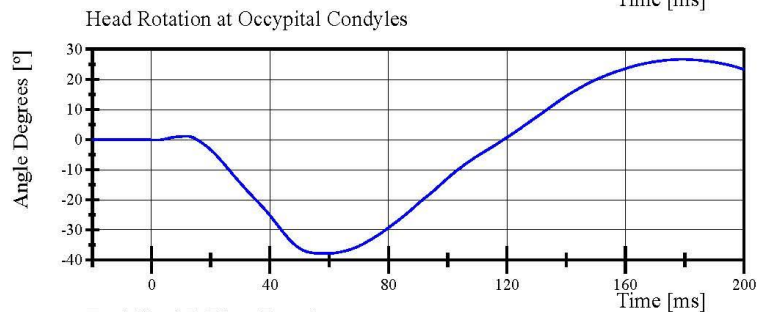
Test Date: 6/26/2024



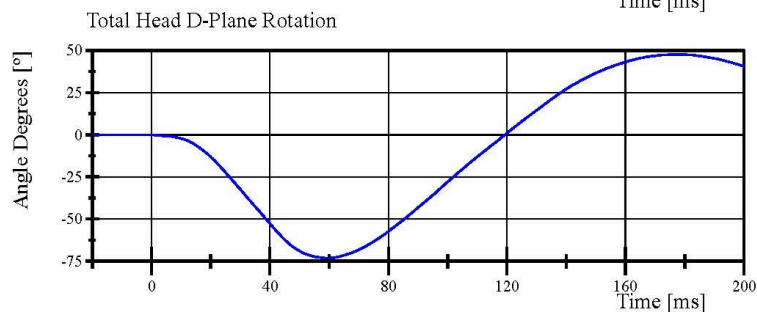
Filter Class: CFC_60
Max: 3.5 g at 42.9 ms
Min: -24.7 g at 8.6 ms



Filter Class: CFC_60
Max: 21.1 ° at 174.4 ms
Min: -35.3 ° at 59.9 ms



Filter Class: CFC_60
Max: 26.6 ° at 179.2 ms
Min: -37.8 ° at 59.2 ms



Filter Class: CFC_60
Max: 47.7 ° at 177.4 ms
Min: -73.1 ° at 59.6 ms

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

06.26.2024 09:04:33 1864

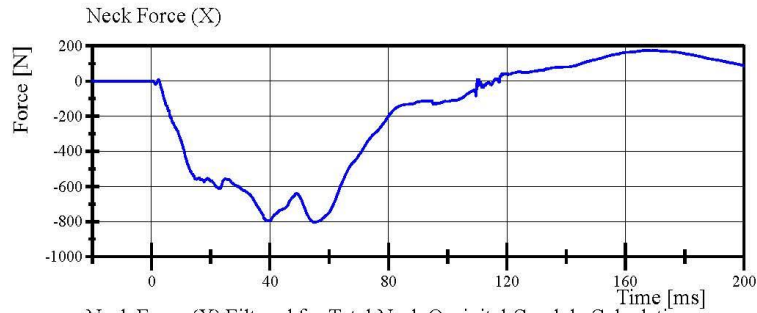


Transportation Research Center Inc.

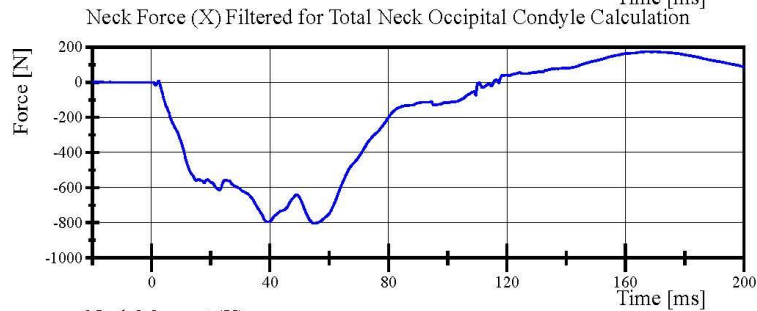
Neck Flexion

HIII 50th Serial No. 037 Certification No. 92-1

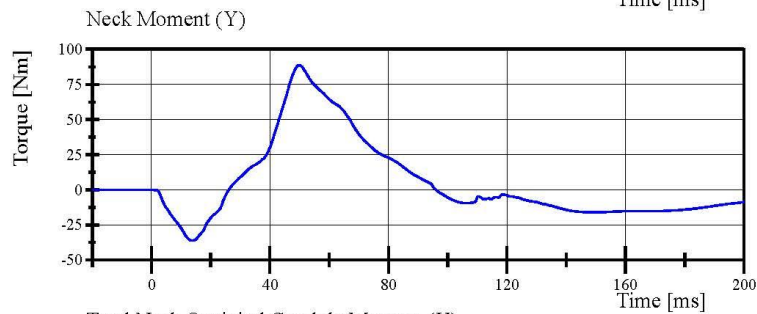
Test Date: 6/26/2024



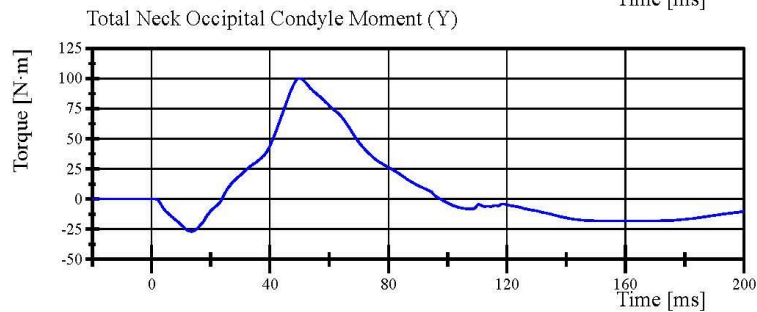
Filter Class: CFC_1000
Max: 174.1 N at 166.6 ms
Min: -803.5 N at 54.8 ms



Filter Class: CFC_600
Max: 173.7 N at 166.7 ms
Min: -803.2 N at 54.9 ms



Filter Class: CFC_600
Max: 88.6 Nm at 49.8 ms
Min: -36.1 Nm at 13.8 ms



Filter Class: Without_(Constar
Max: 100.2 N·m at 50.0 ms
Min: -26.8 N·m at 13.5 ms

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

06.26.2024 09:04:33 1864



Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 92-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.016 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	40.3 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.64 g	Yes
at 20ms	14.0 - 19.0 g	17.33 g	Yes
at 30ms	11.0 - 16.0 g	14.14 g	Yes
> 30ms	<= 22.0 g	14.14 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	96.7 °	Yes
Time of Peak	72 - 82 ms	77.7 ms	Yes
Decay to 0°	147 - 174 ms	158.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-52.9) - (-80) N·m	-68.22 N·m	Yes
Time of Peak	65 - 79 ms	71.2 ms	Yes
Decay to 0 N·m	120 - 148 ms	140.2 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

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

06.26.2024 09:36:15 2008

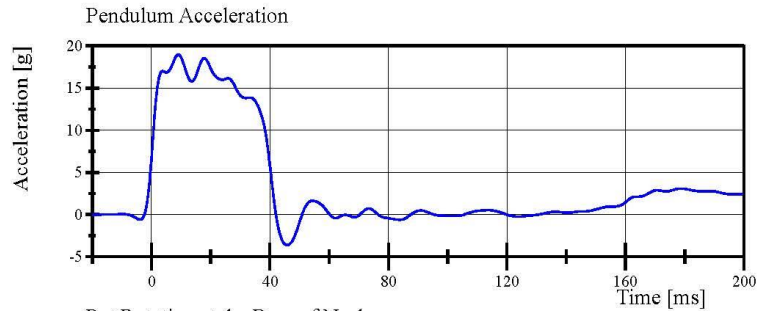


Transportation Research Center Inc.

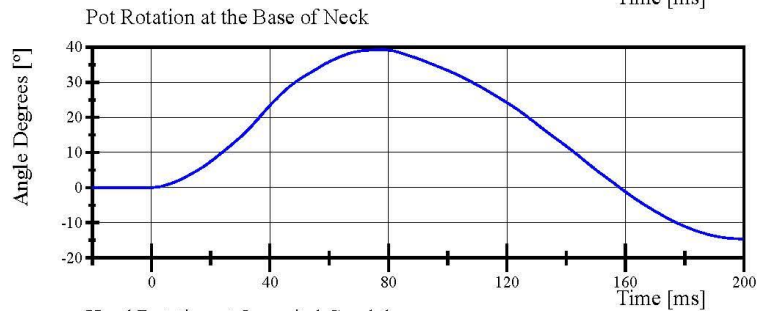
Neck Extension

HIII 50th Serial No. 037 Certification No. 92-1

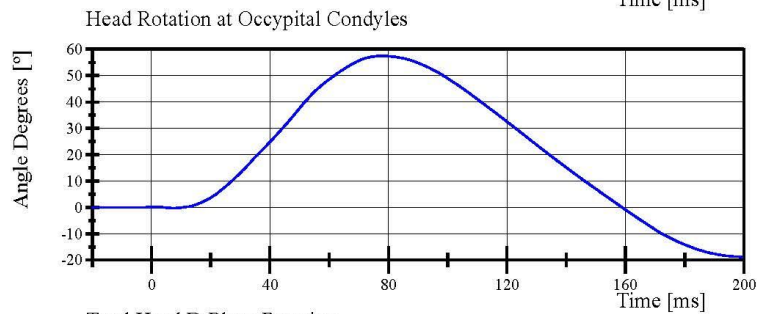
Test Date: 6/26/2024



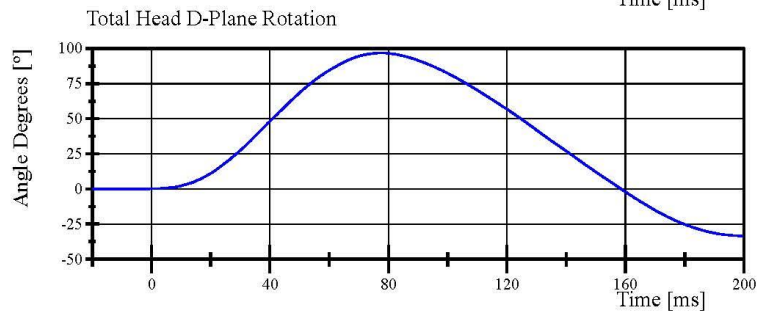
Filter Class: CFC_60
Max: 19.0 g at 9.1 ms
Min: -3.6 g at 45.8 ms



Filter Class: CFC_60
Max: 39.2 ° at 77.1 ms
Min: -14.6 ° at 199.6 ms



Filter Class: CFC_60
Max: 57.5 ° at 77.9 ms
Min: -18.8 ° at 199.6 ms



Filter Class: CFC_60
Max: 96.7 ° at 77.7 ms
Min: -33.4 ° at 199.6 ms

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

06.26.2024 09:36:44 2008

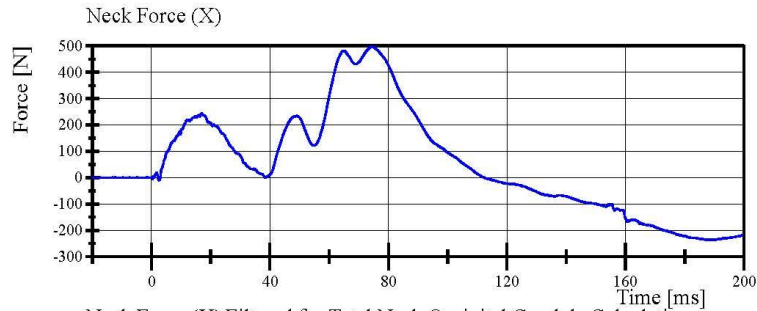


Transportation Research Center Inc.

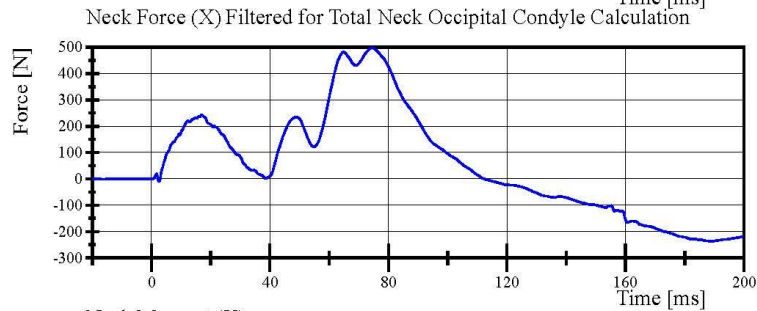
Neck Extension

HIII 50th Serial No. 037 Certification No. 92-1

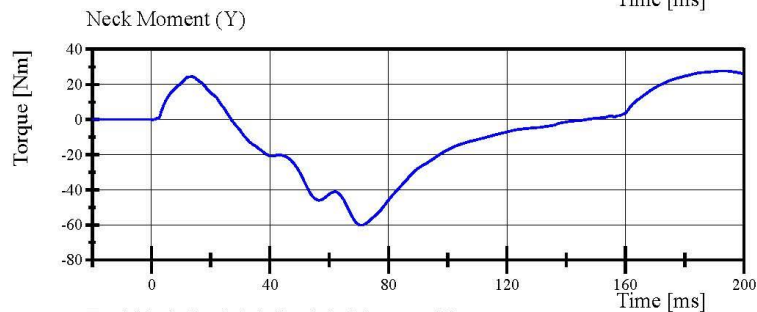
Test Date: 6/26/2024



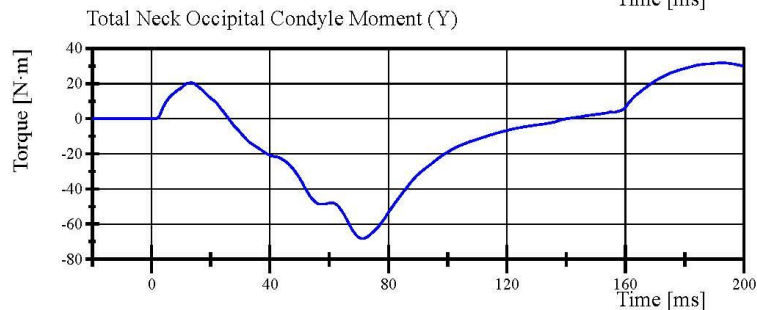
Filter Class: CFC_1000
Max: 497.3 N at 74.4 ms
Min: -237.3 N at 189.7 ms



Filter Class: CFC_600
Max: 497.0 N at 74.5 ms
Min: -236.8 N at 189.7 ms



Filter Class: CFC_600
Max: 27.7 Nm at 193.0 ms
Min: -60.2 Nm at 70.9 ms



Filter Class: Without_(Constar
Max: 31.7 N·m at 192.5 ms
Min: -68.2 N·m at 71.2 ms

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

06.26.2024 09:36:44 2008



Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 037 Certification No. 92-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.622 m/s	Yes
Probe Force Peak	(-5,160) - (-5,894) N	-5,403.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-64.47 mm	Yes
Internal Hysteresis	69 - 85 %	74.2 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: EX0700

Rib Set S/N: 10362

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

06.26.2024 08:12:59 408

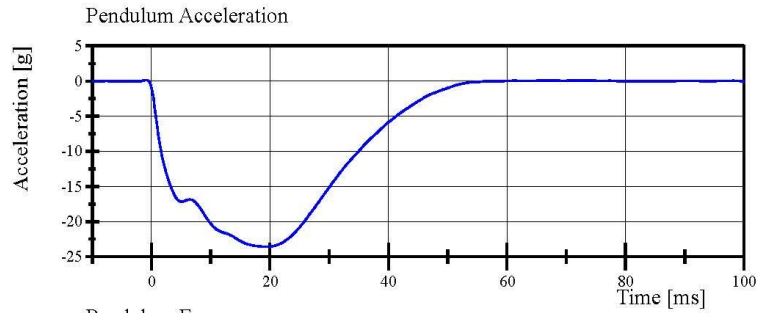


Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 037 Certification No. 92-1

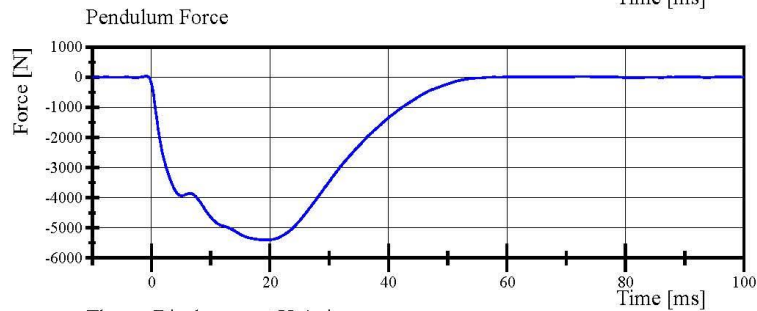
Test Date: 6/26/2024



Filter Class: CFC_180

Max: 0.2 g at -0.9 ms

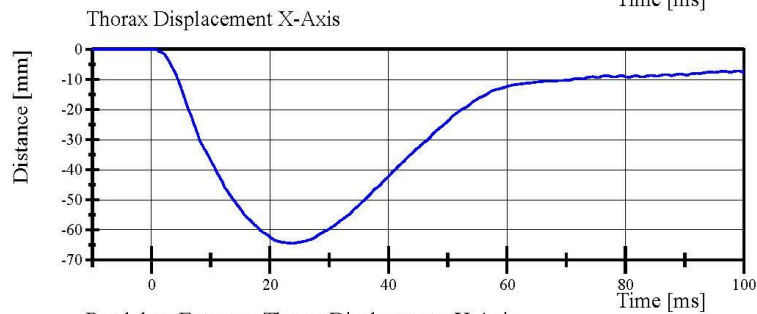
Min: -23.6 g at 19.3 ms



Filter Class: CFC_180

Max: 36.9 N at -0.9 ms

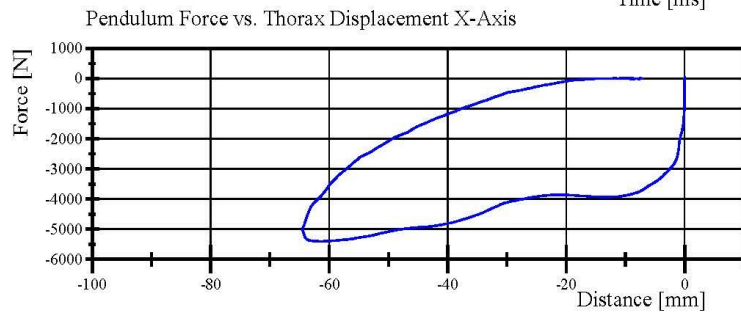
Min: -5,403.5 N at 19.3 ms



Filter Class: CFC_600

Max: 0.0 mm at -9.2 ms

Min: -64.5 mm at 23.8 ms



Filter Class: CFC_180

Max: 36.9 N at -0.0 mm

Min: -5,403.5 N at -61.3 mm

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

06.26.2024 08:13:27 408



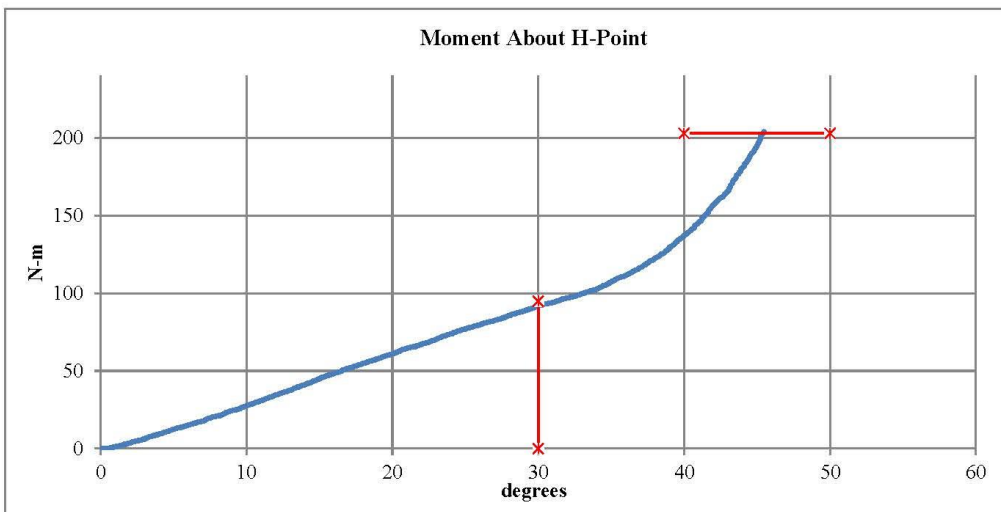
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

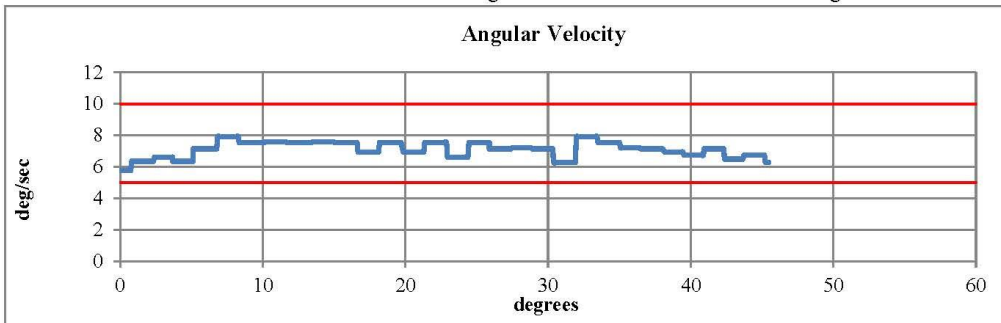


Serial Number: 037 Date: 26-Jun-2024
Side Tested: Left Hip Time: 9:16
Test Number: 1

TEST PARAMETER	SPECIFICATION			TEST RESULTS		
Temperature	18.9	-	25.6	21	°C	Pass
Humidity	10	-	70	68	%	Pass
Moment at 30°	0	≤	94.9	91.95	N-m	Pass
Angle at 203 Nm	40	-	50	45.47	deg	Pass
Average Velocity	5	-	10	7.1	deg/sec	Pass



Max: 7.93 deg/sec Min: 5.77 deg/sec



Comments: Pelvis S/N: EU6859

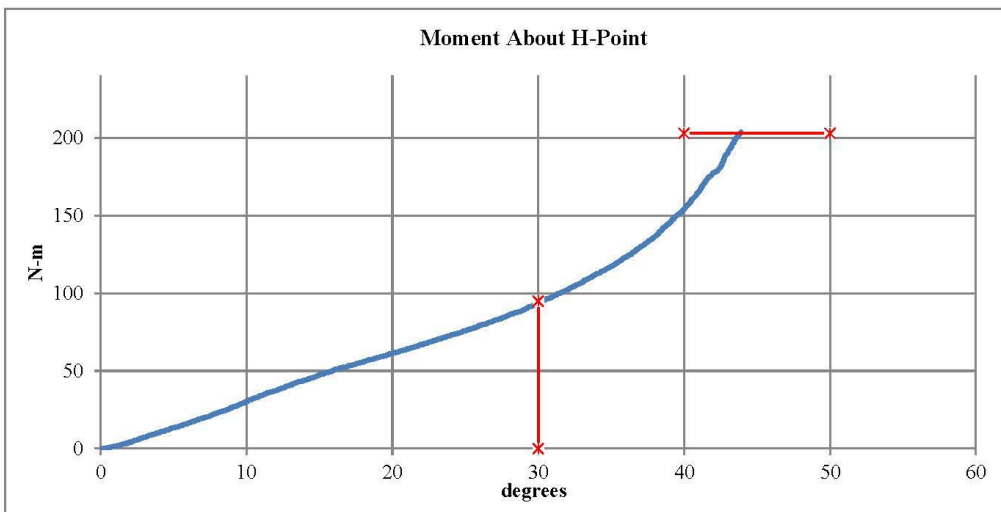
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

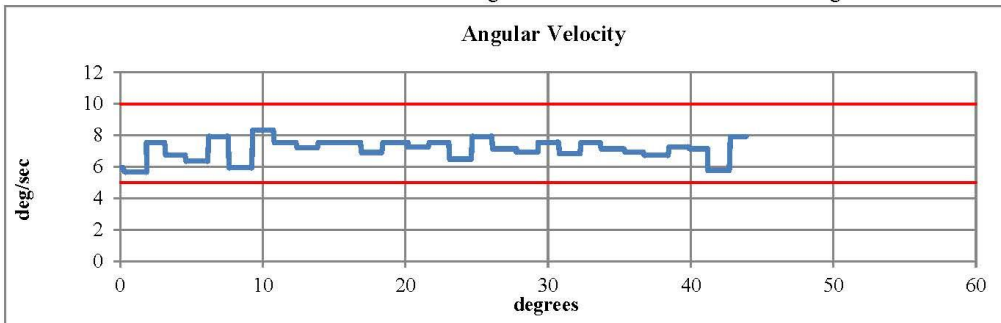


Serial Number: 037 Date: 26-Jun-2024
Side Tested: Right Hip Time: 10:21
Test Number: 1

TEST PARAMETER	SPECIFICATION			TEST RESULTS		
Temperature	18.9	-	25.6	20.8	°C	Pass
Humidity	10	-	70	68	%	Pass
Moment at 30°	0	≤	94.9	93.65	N-m	Pass
Angle at 203 Nm	40	-	50	43.89	deg	Pass
Average Velocity	5	-	10	7.13	deg/sec	Pass



Max: 8.33 deg/sec Min: 5.67 deg/sec



Comments: Pelvis S/N: EU6859

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 92-1
Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	69 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.123 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,738.92 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 2672

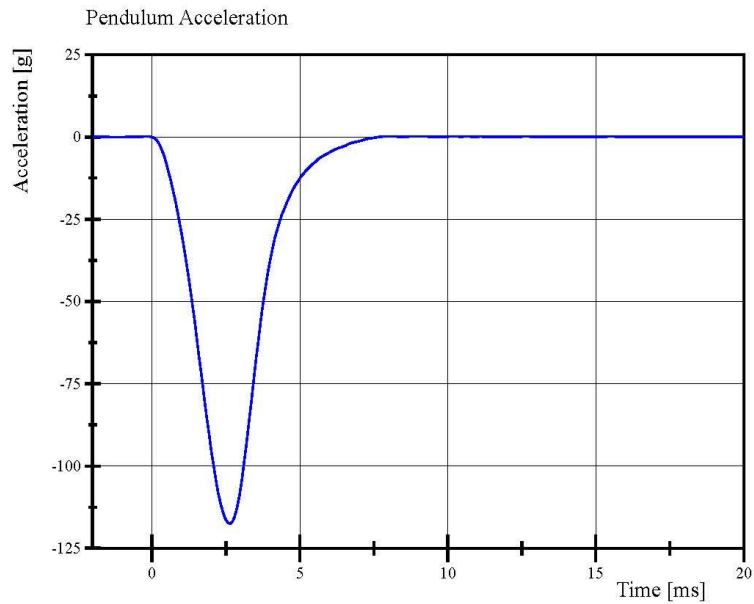
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

06.26.2024 10:57:30 1749

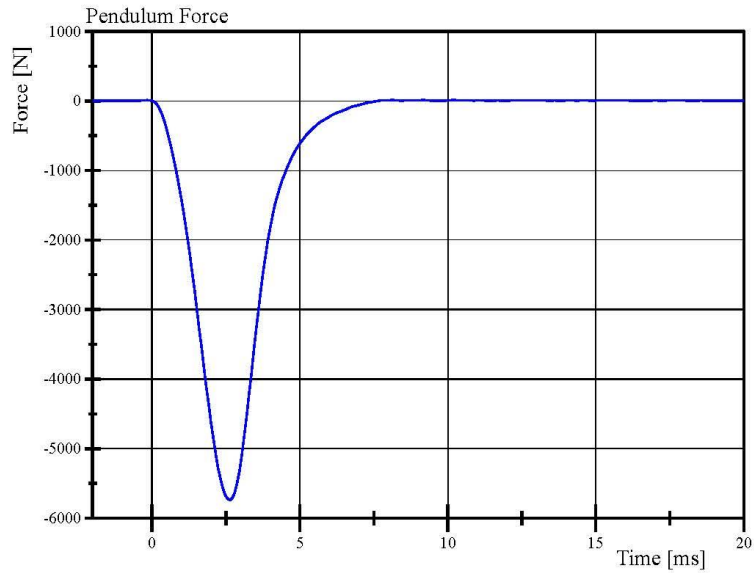


Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 92-1
Test Date: 6/26/2024



Filter Class: CFC_600
Max: 0.2 g at 9.1 ms
Min: -117.5 g at 2.6 ms



Filter Class: CFC_600
Max: 8.5 N at 9.1 ms
Min: -5,738.9 N at 2.6 ms

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

06.26.2024 10:57:56 1749



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 92-1
Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	70 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,518.97 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 1248

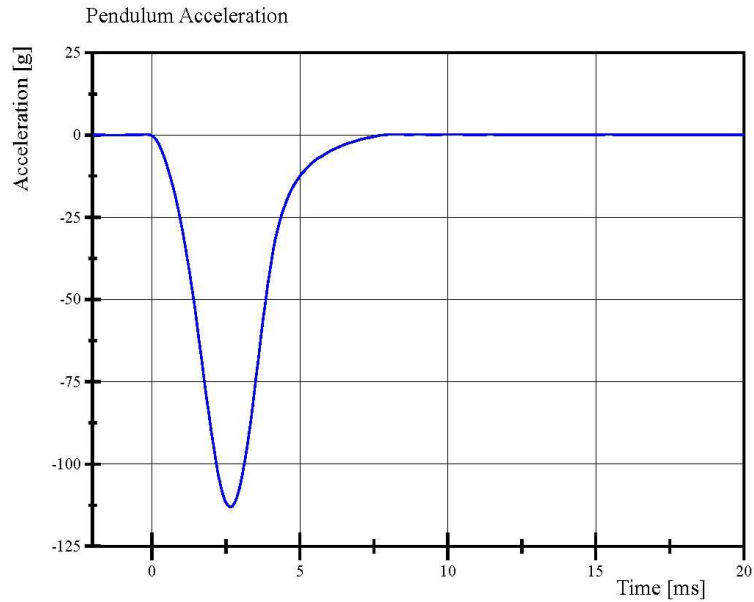
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

06.26.2024 11:01:53 1746

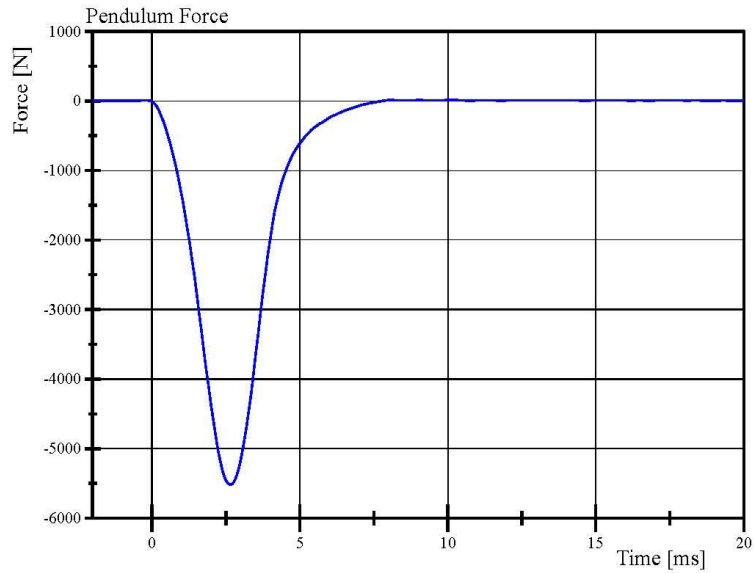


Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 92-1
Test Date: 6/26/2024



Filter Class: CFC_600
Max: 0.2 g at 10.1 ms
Min: -113.0 g at 2.6 ms



Filter Class: CFC_600
Max: 9.8 N at 10.1 ms
Min: -5,519.0 N at 2.6 ms

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

06.26.2024 11:02:19 1746



Pre-Test Calibration Sheets

Passenger S/N DH1659

Transportation Research Center Inc.
5720 HIII 5th Dummy
External Dimensions
Serial No. DH1659 Calibration No. 17

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	781	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	86	Yes
D	Hip Pivot from Backline	144.8 - 149.8	148	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	80	Yes
F	Thigh Clearance	119.4 - 134.6	131	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	249	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	286	Yes
J	Elbow Rest Height	182.8 - 203.2	197	Yes
K	Buttock Knee Length	520.7 - 546.1	533	Yes
L	Popliteal Height	355.6 - 376.0	360	Yes
M	Knee Pivot Height	393.7 - 419.1	409	Yes
N	Buttock Popliteal Length	414.0 - 439.4	430	Yes
O	Chest Depth without Jacket	175.3 - 190.5	185	Yes
P	Foot Length	218.5 - 233.7	225	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	473	Yes
S	Head Breadth	137.1 - 147.3	141	Yes
T	Head Depth	177.8 - 188.0	180	Yes
U	Hip Breadth	299.7 - 314.9	305	Yes
V	Shoulder Breadth	350.5 - 365.7	356	Yes
W	Foot Breadth	78.8 - 94.0	85	Yes
X	Head Circumference	528.3 - 548.7	539	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	869	Yes
Z	Waist Circumference	759.5 - 789.9	776	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	345	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Revised 8/10/12



Report Number: DH1659_HFH18

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Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. DH1659 Certification No. 18-6

Test Date: 6/13/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	273.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	7.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	< 10 %	1.63 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: 2864

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

06.14.2024 11:05:57 613

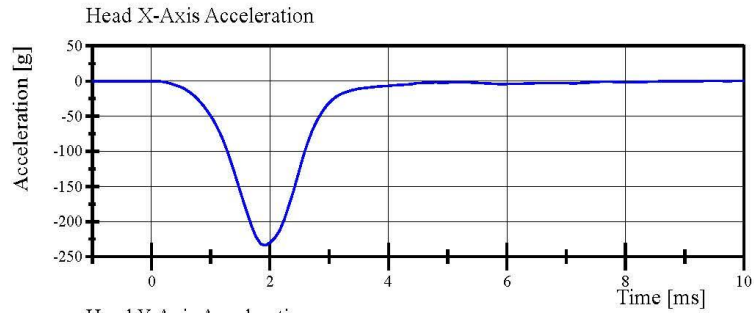


Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. DH1659 Certification No. 18-6

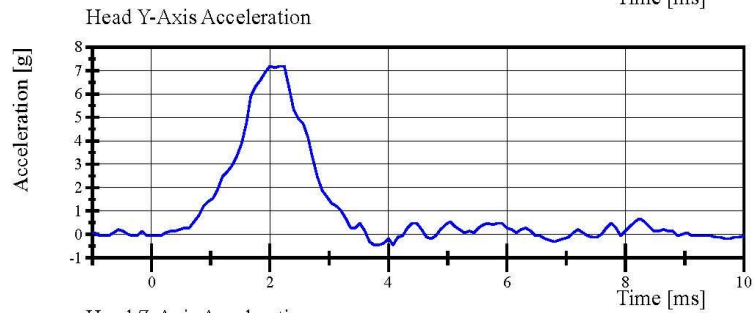
Test Date: 6/13/2024



Filter Class: CFC_1000

Max: 0.3 g at 9.9 ms

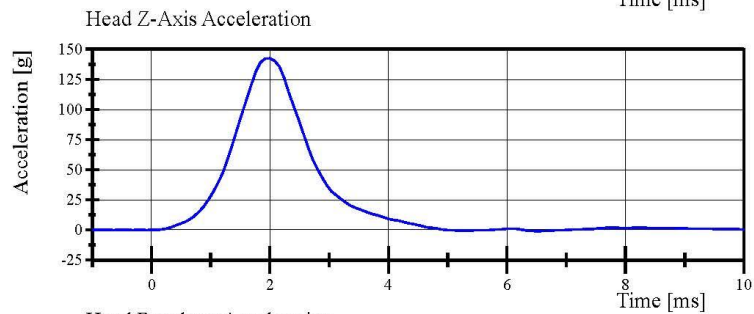
Min: -233.6 g at 1.9 ms



Filter Class: CFC_1000

Max: 7.2 g at 2.0 ms

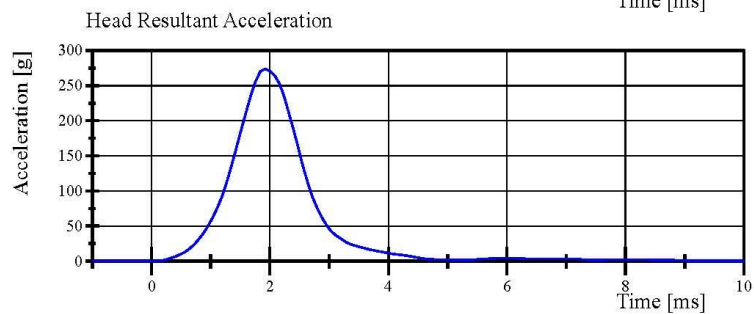
Min: -0.5 g at 3.8 ms



Filter Class: CFC_1000

Max: 142.5 g at 2.0 ms

Min: -1.0 g at 6.5 ms



Filter Class: CFC_1000

Max: 273.7 g at 1.9 ms

Min: 0.0 g at -0.4 ms

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

06.14.2024 11:06:36 613



Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.112 m/s	Yes
Pendulum Integrated Velocity			
Change at 10ms	(-2.1) - (-2.5) m/s	-2.17 m/s	Yes
Change at 20ms	(-4.0) - (-5.0) m/s	-4.34 m/s	Yes
Change at 30ms	(-5.8) - (-7.0) m/s	-6.29 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-82.1 °	Yes
Total Neck Occipital Condyles Moment			
Between -77° and -91° Rotation	69 - 83 N·m	81.3 N·m	Yes
Decay to 10 N·m	80 - 100 ms	88.0 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: EE9454

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

06.12.2024 13:32:55 1842

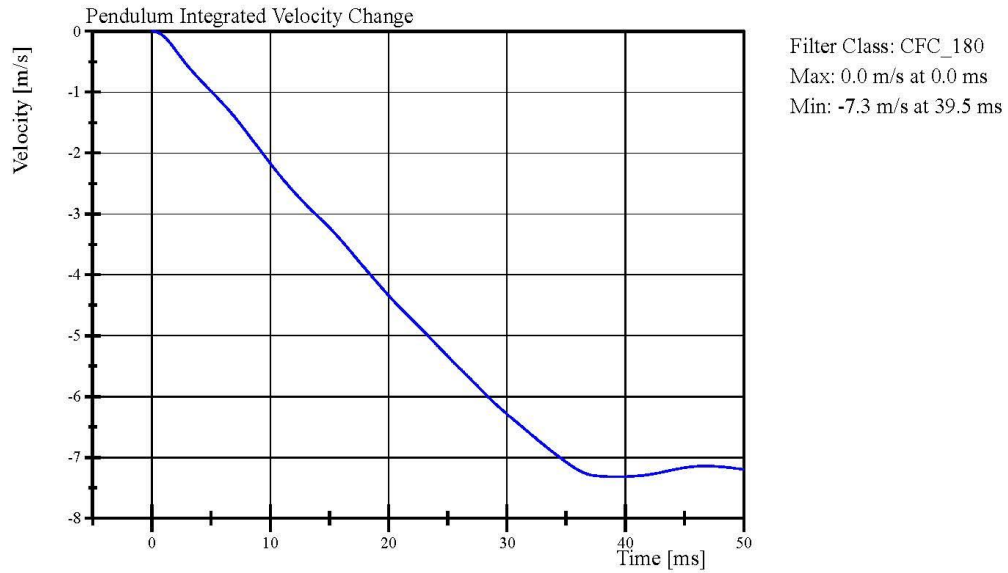
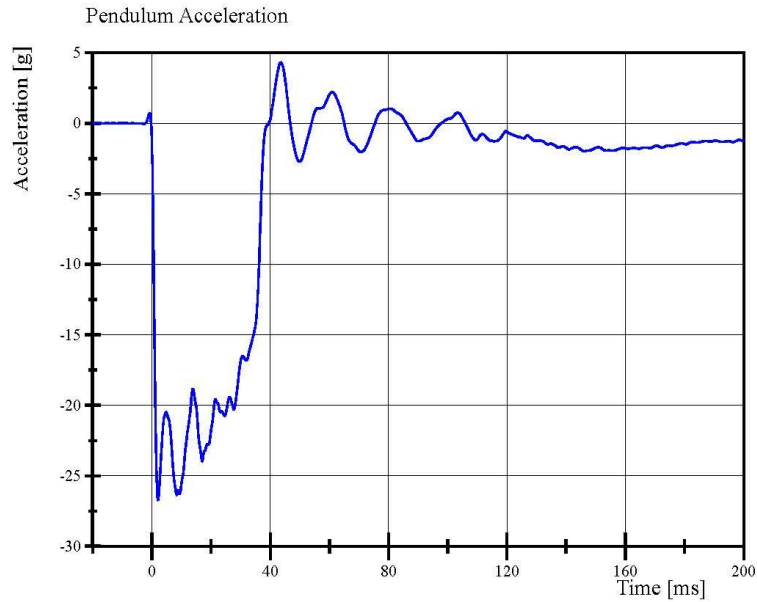


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/12/2024



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

06.12.2024 13:33:21 1842



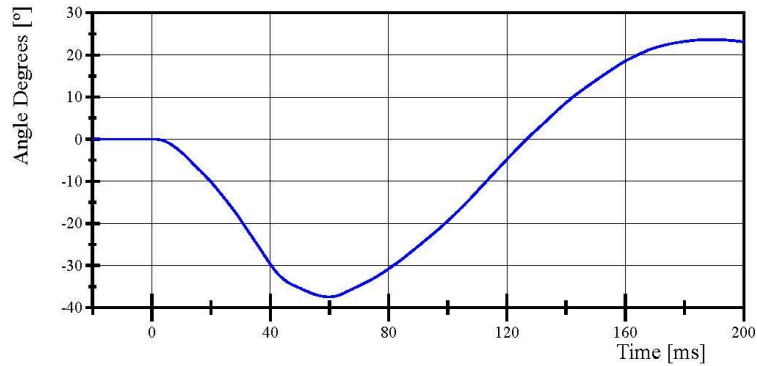
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 17-1

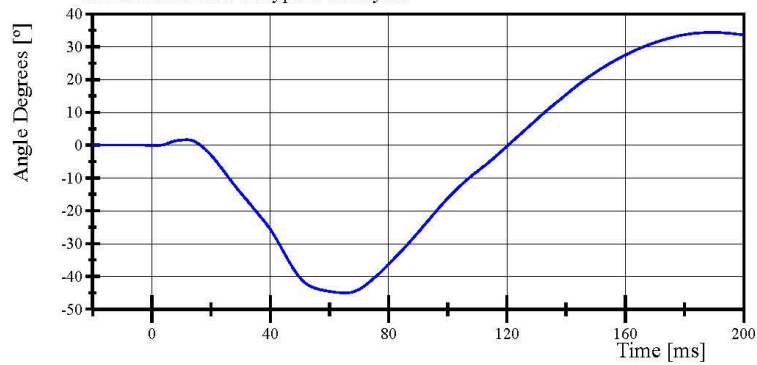
Test Date: 6/12/2024

Pot Rotation at the Base of Neck



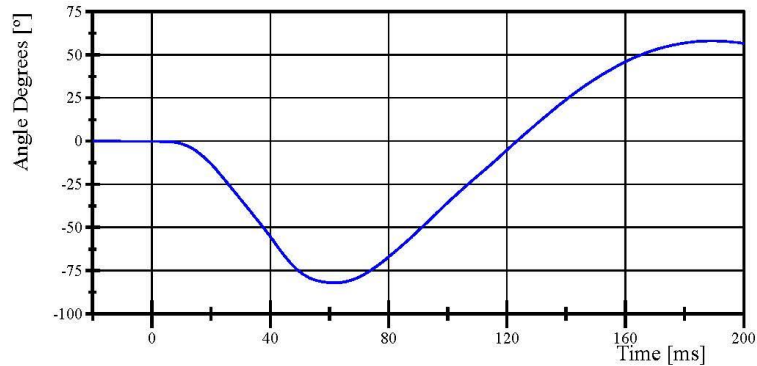
Filter Class: CFC_60
Max: 23.7 ° at 189.0 ms
Min: -37.4 ° at 59.8 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 34.4 ° at 189.7 ms
Min: -45.0 ° at 65.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 58.1 ° at 189.5 ms
Min: -82.1 ° at 61.7 ms

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

06.12.2024 13:33:21 1842

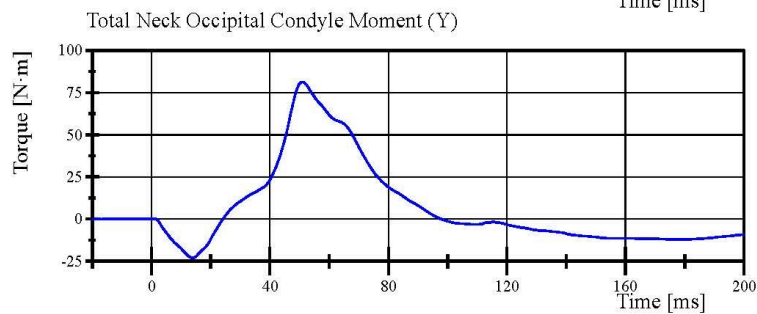
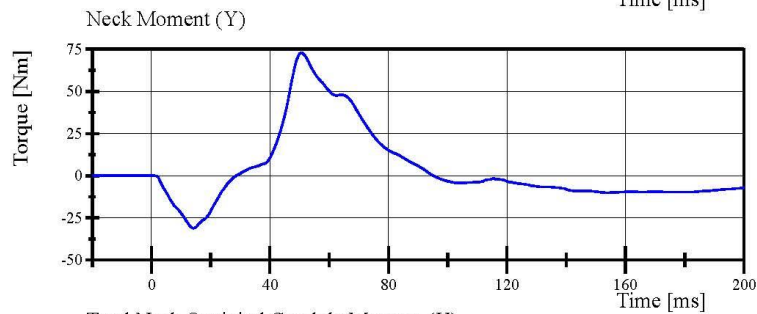
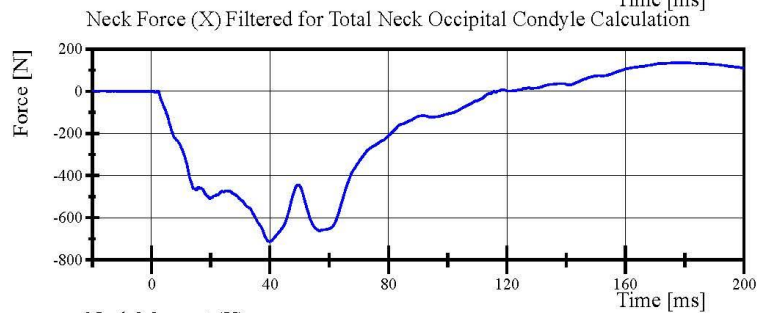
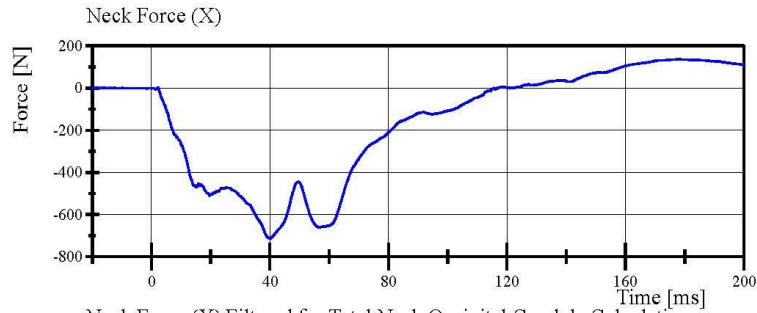


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/12/2024



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

06.12.2024 13:33:21 1842



Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.076 m/s	Yes
Pendulum Integrated Velocity			
Change at 10ms	1.5 - 1.9 m/s	1.56 m/s	Yes
Change at 20ms	3.1 - 3.9 m/s	3.21 m/s	Yes
Change at 30ms	4.6 - 5.6 m/s	4.84 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	109.4 °	Yes
Total Neck Occipital Condyles Moment			
Between 99° and 114° Rotation	(-53) - (-65) N·m	-56.8 N·m	Yes
Decay to -10 N·m	94 - 114 ms	106.2 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: EE9454

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

06.12.2024 14:07:22 2003

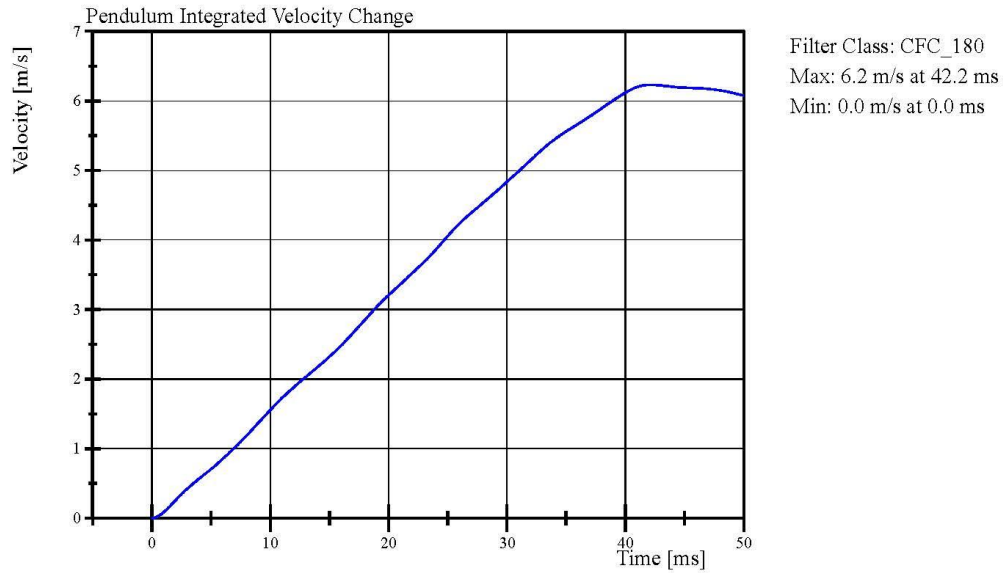
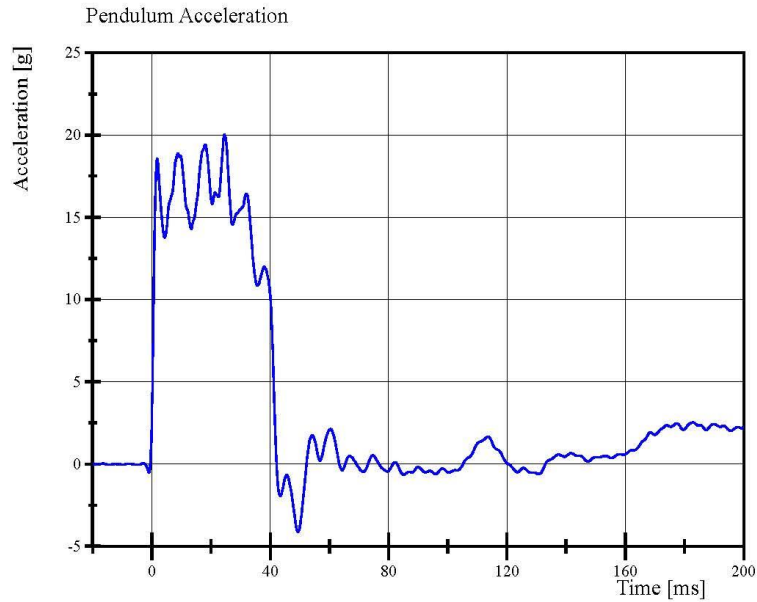


Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/12/2024



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

06.12.2024 14:07:56 2003



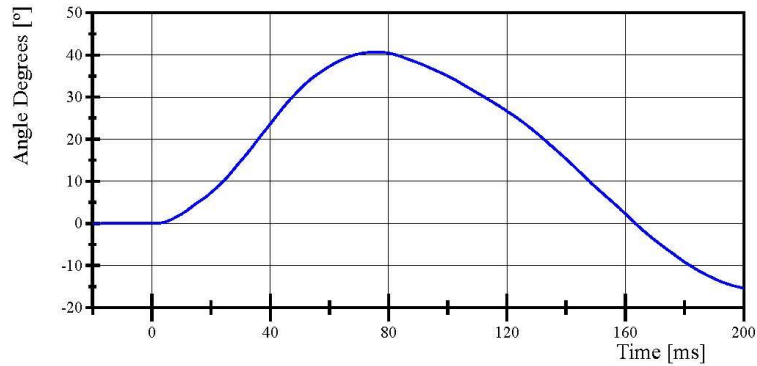
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/12/2024

Pot Rotation at the Base of Neck

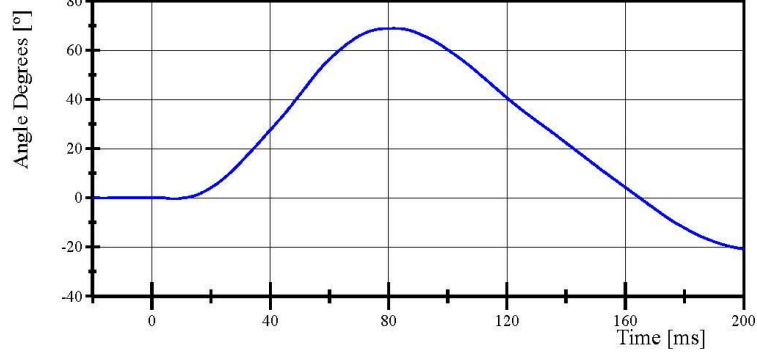


Filter Class: CFC_60

Max: 40.7 ° at 75.8 ms

Min: -15.4 ° at 199.9 ms

Head Rotation at Occypital Condyles

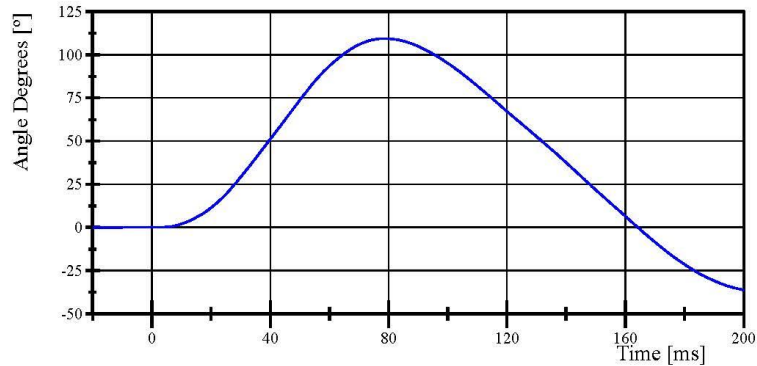


Filter Class: CFC_60

Max: 68.9 ° at 81.7 ms

Min: -20.9 ° at 199.9 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 109.4 ° at 78.6 ms

Min: -36.2 ° at 199.9 ms

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

06.12.2024 14:07:57 2003

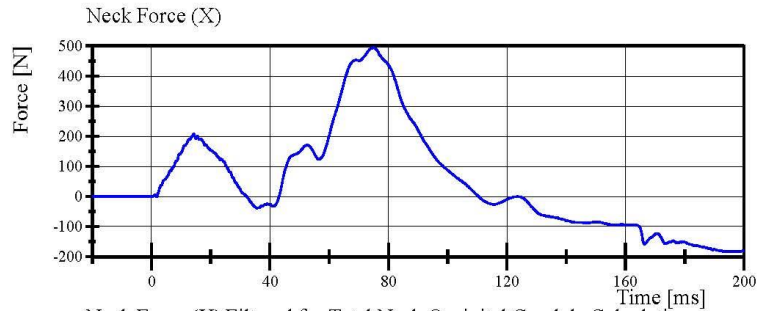


Transportation Research Center Inc.

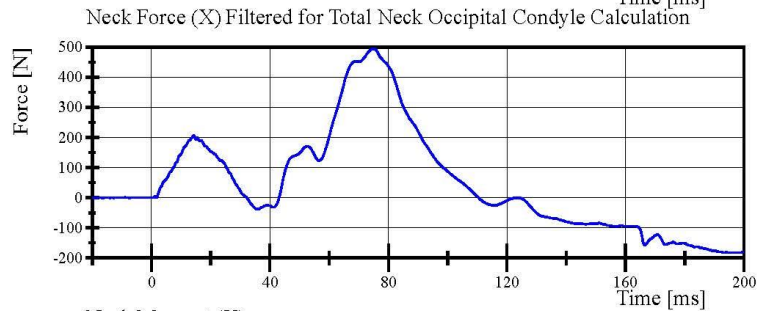
Neck Extension

HIII 5th Serial No. DH1659 Certification No. 17-1

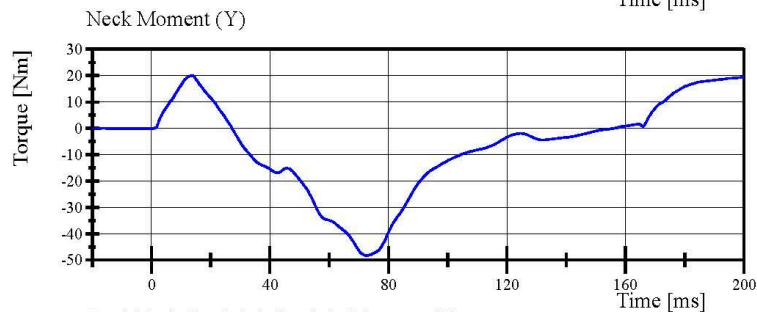
Test Date: 6/12/2024



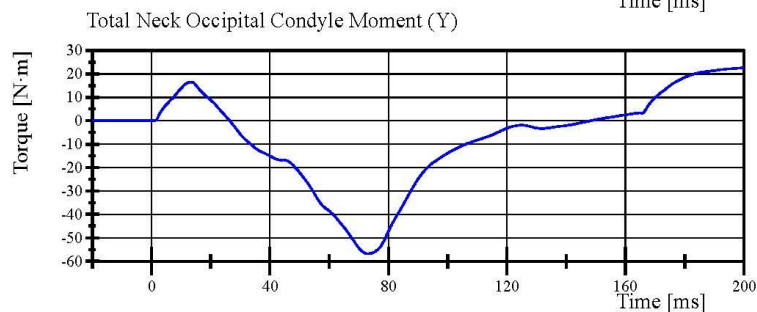
Filter Class: CFC_1000
Max: 494.5 N at 75.0 ms
Min: -183.7 N at 198.2 ms



Filter Class: CFC_600
Max: 494.4 N at 75.2 ms
Min: -183.0 N at 198.2 ms



Filter Class: CFC_600
Max: 20.0 Nm at 13.9 ms
Min: -48.3 Nm at 72.6 ms



Filter Class: Without_(Constar
Max: 22.6 N·m at 199.7 ms
Min: -56.8 N·m at 73.1 ms

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

06.12.2024 14:07:57 2003



Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. DH1659 Certification No. 17-1

Test Date: 6/13/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.820 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,242.0 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-4,258.9 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-52.5 mm	Yes
Internal Hysteresis	69 - 85 %	74.3 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: EE8365

Rib Set S/N: DI5873

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

06.13.2024 13:06:30 383

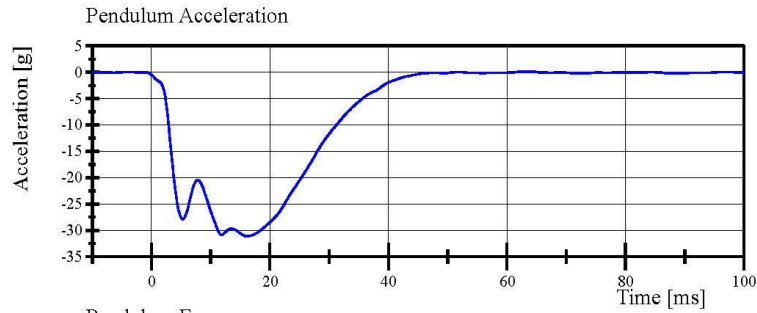


Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. DH1659 Certification No. 17-1

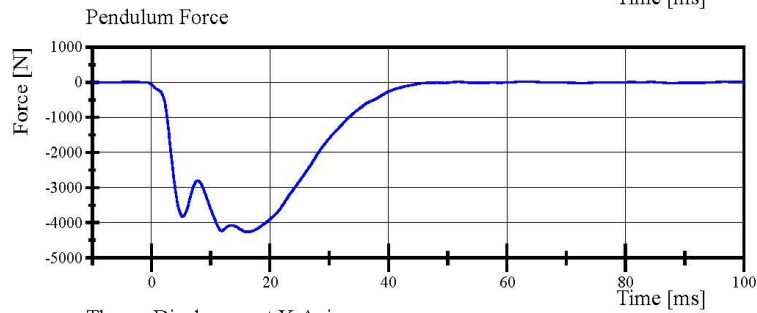
Test Date: 6/13/2024



Filter Class: CFC_180

Max: 0.1 g at 64.2 ms

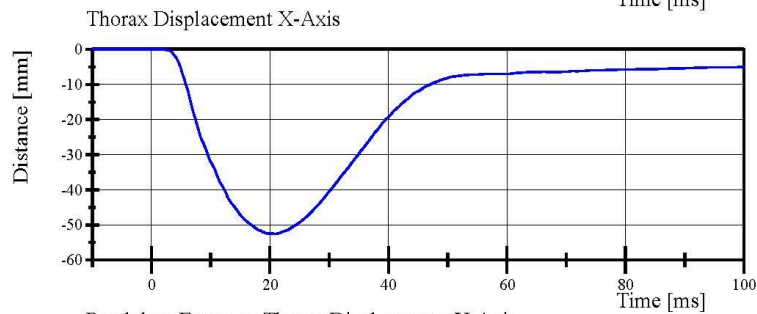
Min: -31.1 g at 16.2 ms



Filter Class: CFC_180

Max: 16.3 N at 64.2 ms

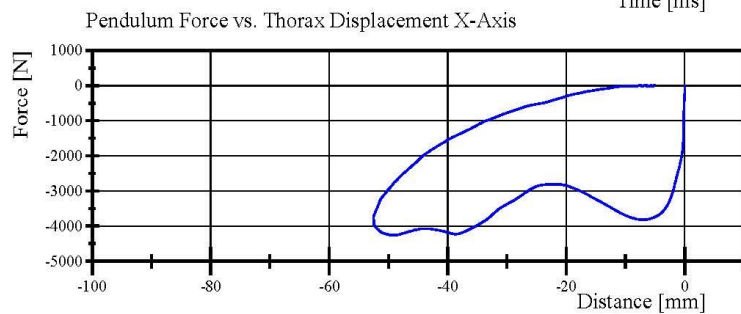
Min: -4,258.9 N at 16.2 ms



Filter Class: CFC_600

Max: 0.0 mm at -3.0 ms

Min: -52.5 mm at 20.9 ms



Filter Class: CFC_180

Max: 16.3 N at -6.4 mm

Min: -4,258.9 N at -49.1 mm

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

06.13.2024 13:07:39 383



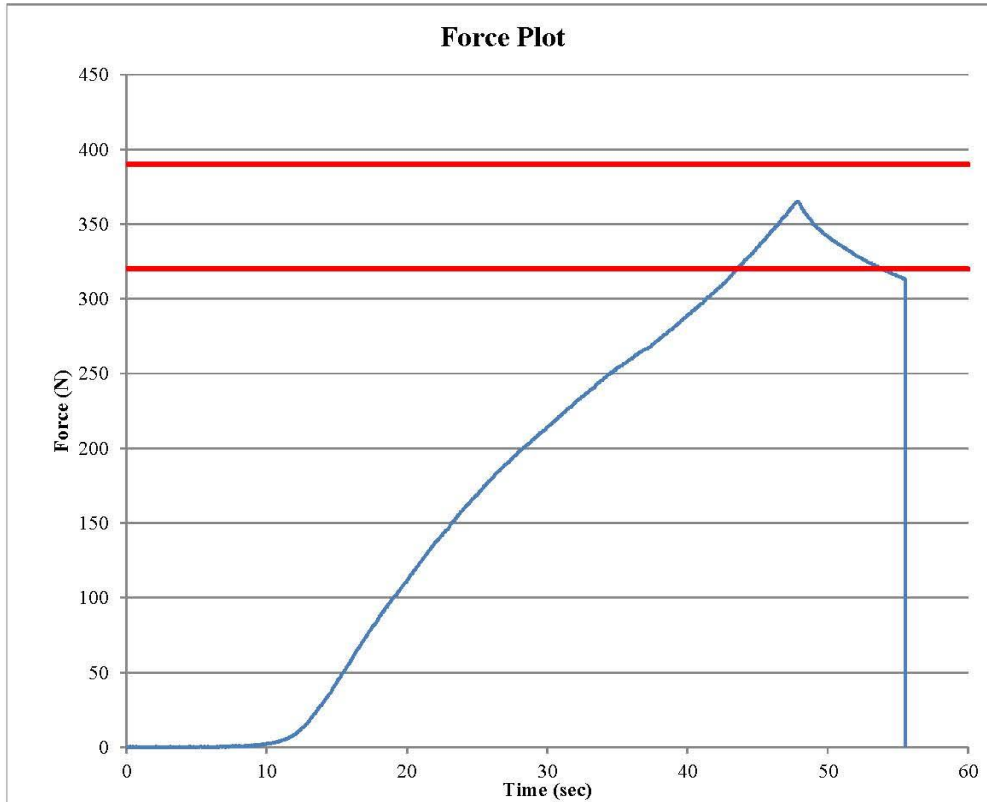
Transportation Research Center Inc.

Hybrid III Small Female Torso Flexion



Customer: NHTSA
Serial Number: DH1659 Date: 6/13/2024
Test Number: 1 Time: 9:18

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.3 °C Pass
Humidity	10 - 70	51 % Pass
Average Angular Rate	0.5 - 1.5	0.95 deg/sec Pass
Initial Angle	0 - 20	10.71 deg Pass
Peak Force at 45.63°	320 - 390	364.85 N Pass
Final Angle	-8 - 8	2.27 deg Pass



Components: Comments:
Jacket S/N: EE8385
Abdomen S/N: EE8393
Lumbar S/N: EW9168

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 17-1
Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.084 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-4,022.2 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: ED6729

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

06.12.2024 14:31:13 2115

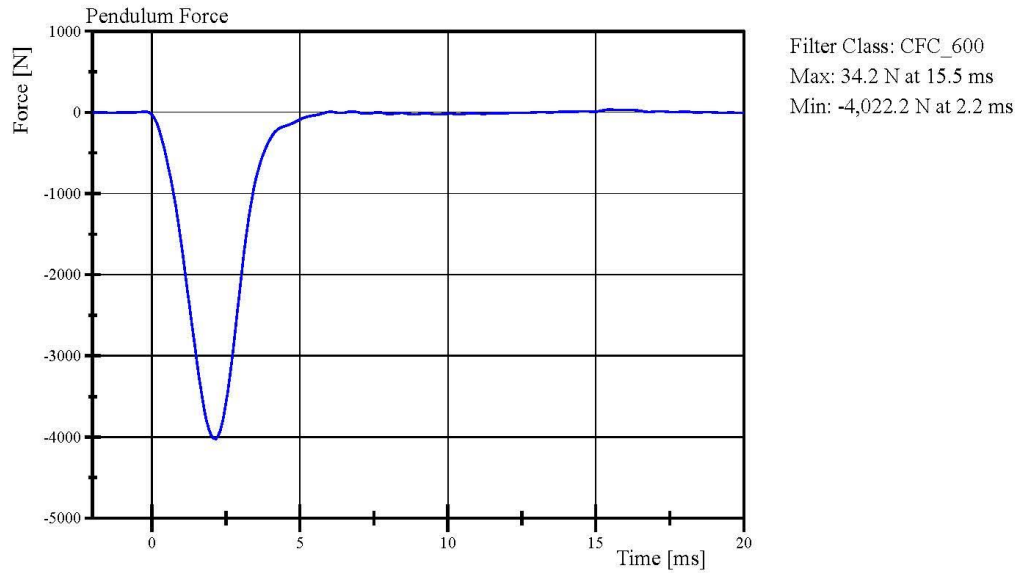
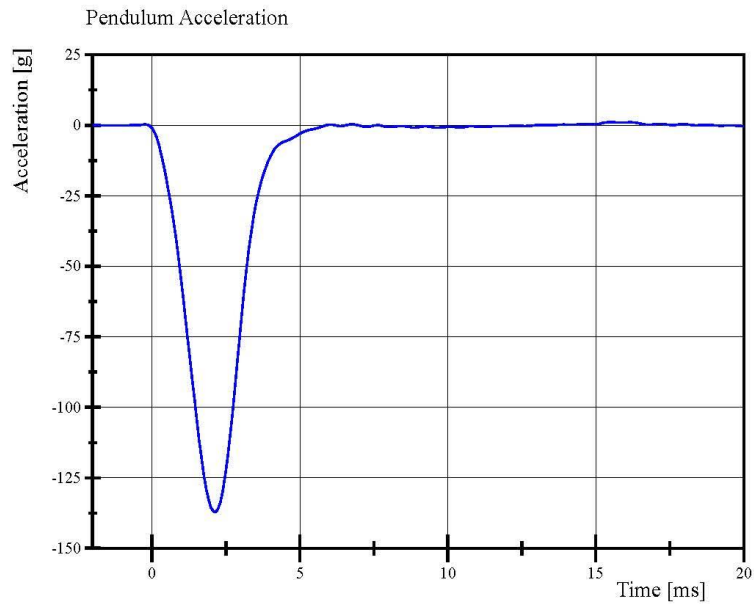


Report Number: DH1659_HFH18

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Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 17-1
Test Date: 6/12/2024



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

06.12.2024 14:31:55 2115



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 17-1
Test Date: 6/12/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.085 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-4,034.8 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: EC5852

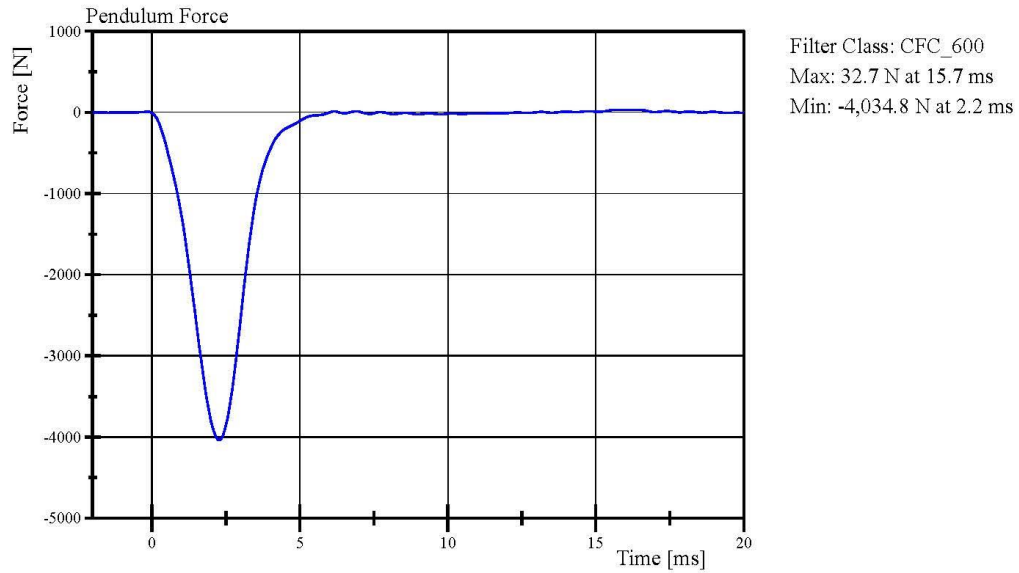
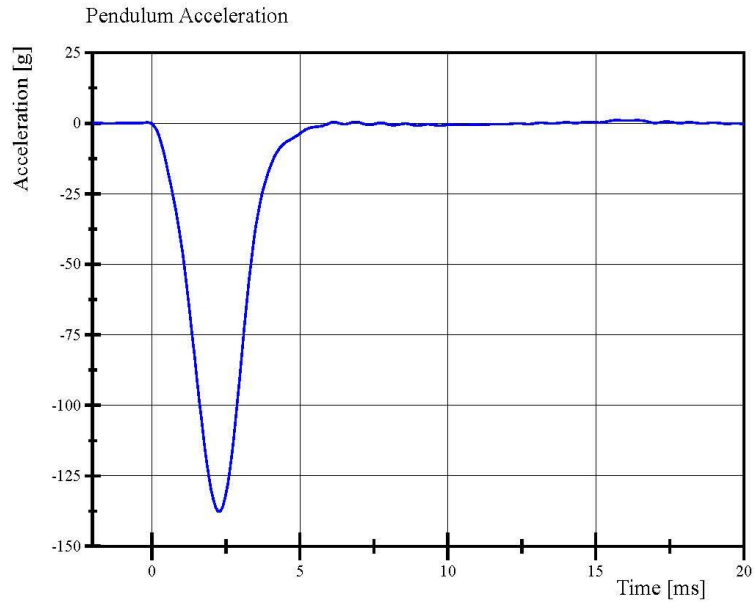
Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

06.12.2024 14:38:29 2113



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 17-1
Test Date: 6/12/2024



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

06.12.2024 14:39:09 2113



Post-Test Calibration Sheets

Passenger S/N DH1659

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	70 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.118 m/s	Yes
Pendulum Integrated Velocity			
Change at 10ms	(-2.1) - (-2.5) m/s	-2.29 m/s	Yes
Change at 20ms	(-4.0) - (-5.0) m/s	-4.56 m/s	Yes
Change at 30ms	(-5.8) - (-7.0) m/s	-6.55 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-84.1 °	Yes
Total Neck Occipital Condyles Moment			
Between -77° and -91° Rotation	69 - 83 N·m	80.1 N·m	Yes
Decay to 10 N·m	80 - 100 ms	87.0 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: EE9454

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

06.26.2024 14:12:28 1845

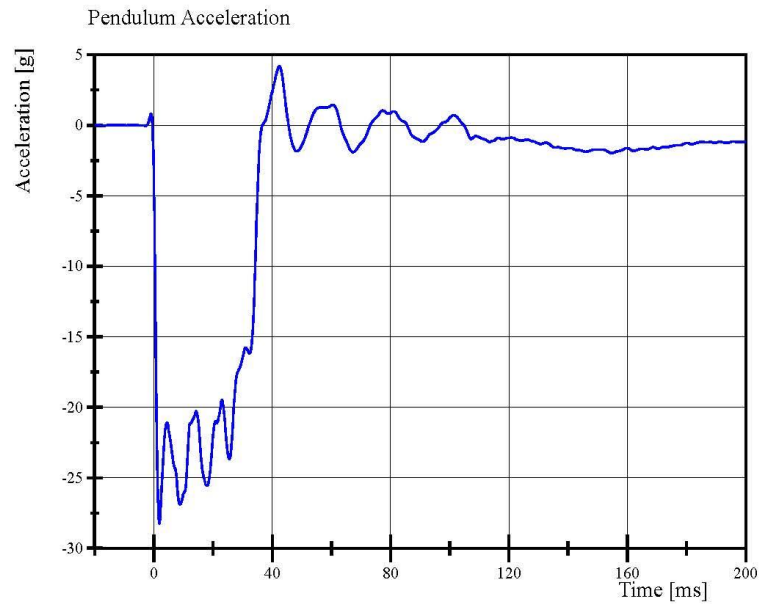


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 19-1

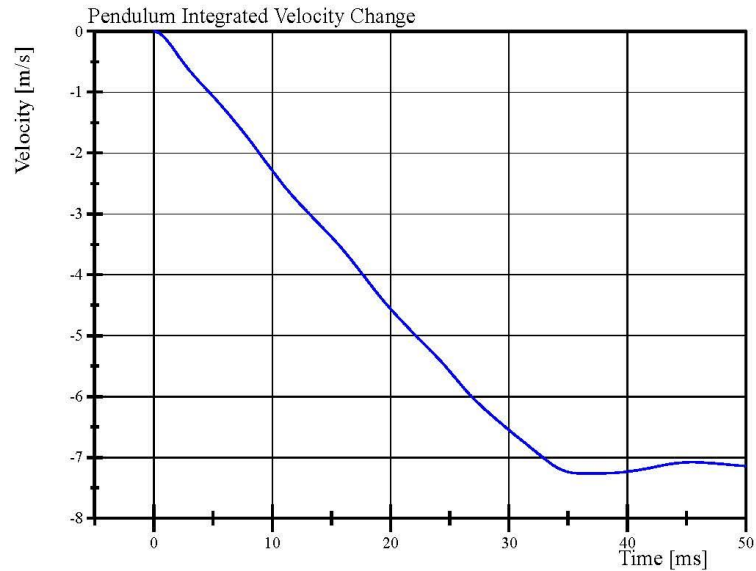
Test Date: 6/26/2024



Filter Class: CFC_180

Max: 4.2 g at 42.4 ms

Min: -28.2 g at 1.9 ms



Filter Class: CFC_180

Max: 0.0 m/s at 0.0 ms

Min: -7.3 m/s at 36.7 ms

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

06.26.2024 14:12:51 1845



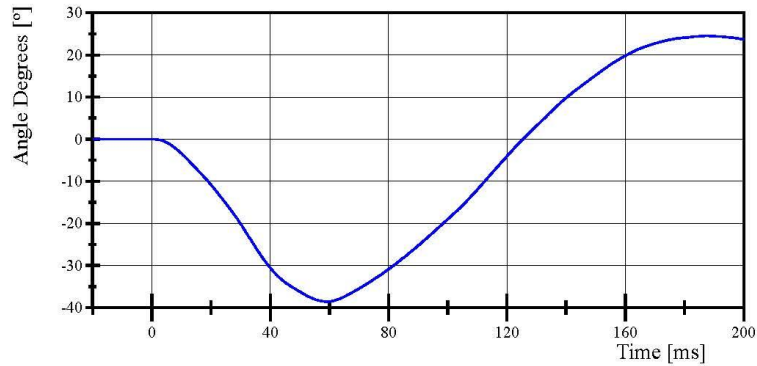
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 19-1

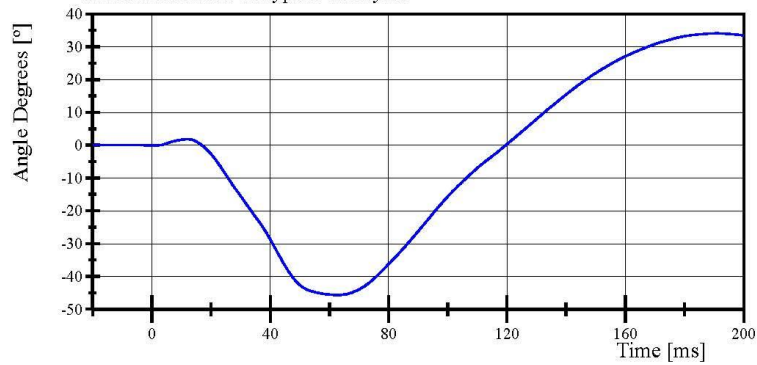
Test Date: 6/26/2024

Pot Rotation at the Base of Neck



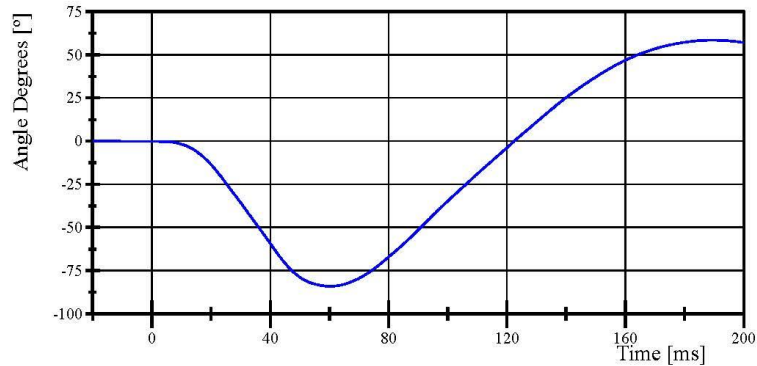
Filter Class: CFC_60
Max: 24.5 ° at 187.5 ms
Min: -38.5 ° at 59.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 34.1 ° at 191.0 ms
Min: -45.6 ° at 62.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 58.5 ° at 189.3 ms
Min: -84.1 ° at 60.2 ms

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

06.26.2024 14:12:51 1845

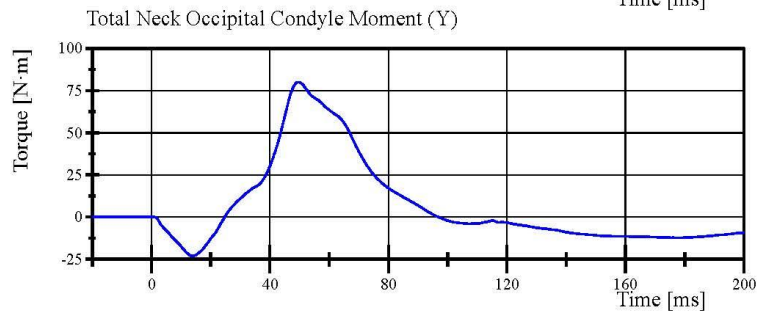
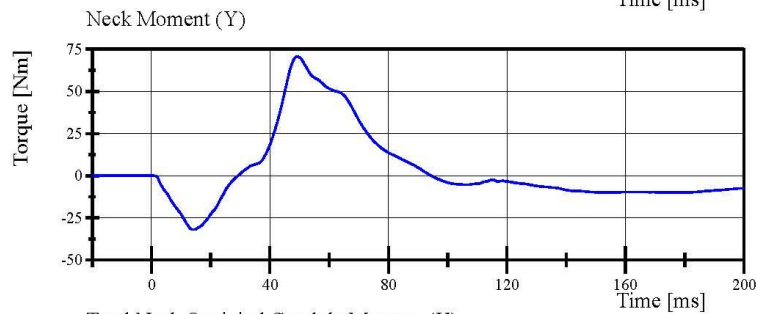
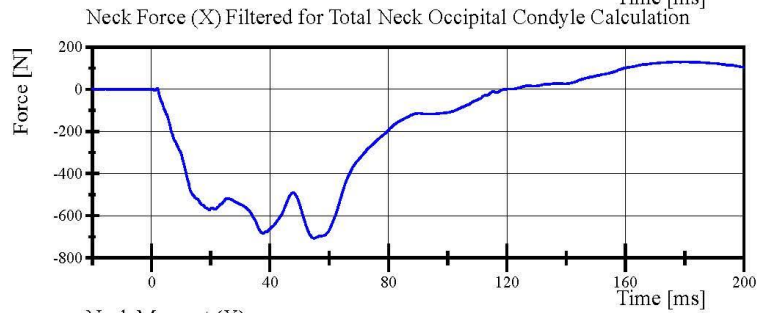
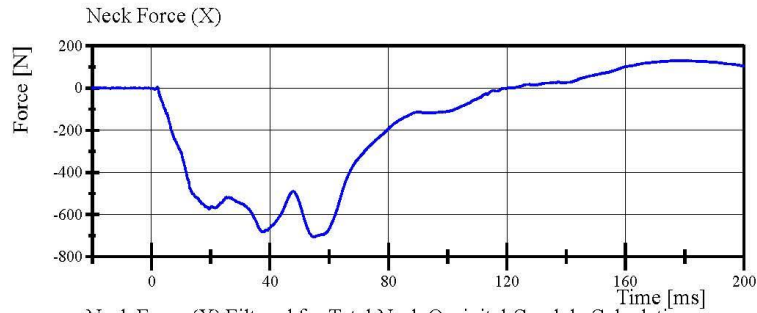


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024



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

06.26.2024 14:12:52 1845



Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.076 m/s	Yes
Pendulum Integrated Velocity			
Change at 10ms	1.5 - 1.9 m/s	1.64 m/s	Yes
Change at 20ms	3.1 - 3.9 m/s	3.34 m/s	Yes
Change at 30ms	4.6 - 5.6 m/s	5.02 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	108.7 °	Yes
Total Neck Occipital Condyles Moment			
Between 99° and 114° Rotation	(-53) - (-65) N·m	-59.0 N·m	Yes
Decay to -10 N·m	94 - 114 ms	105.1 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: EE9454

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

06.26.2024 14:47:49 2002

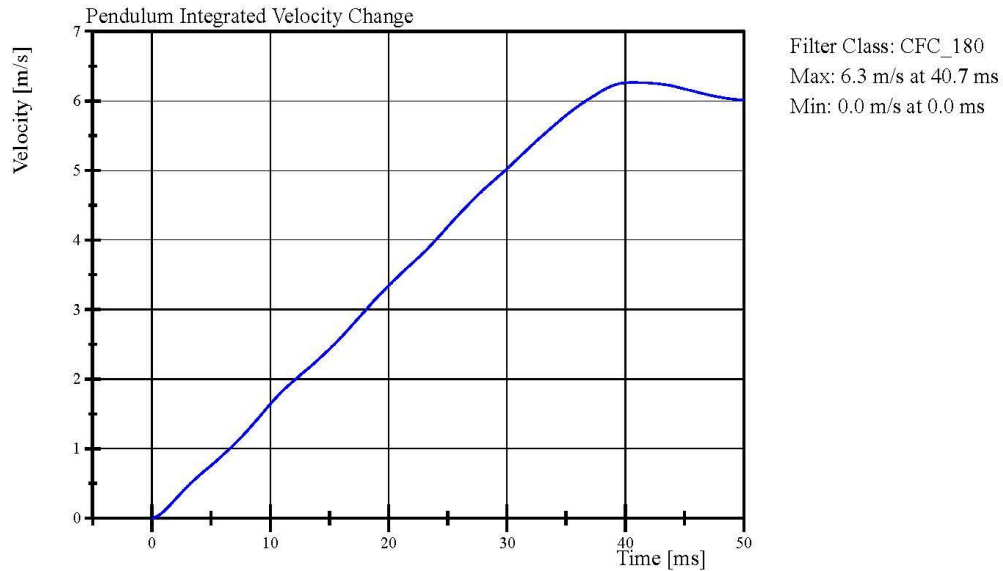
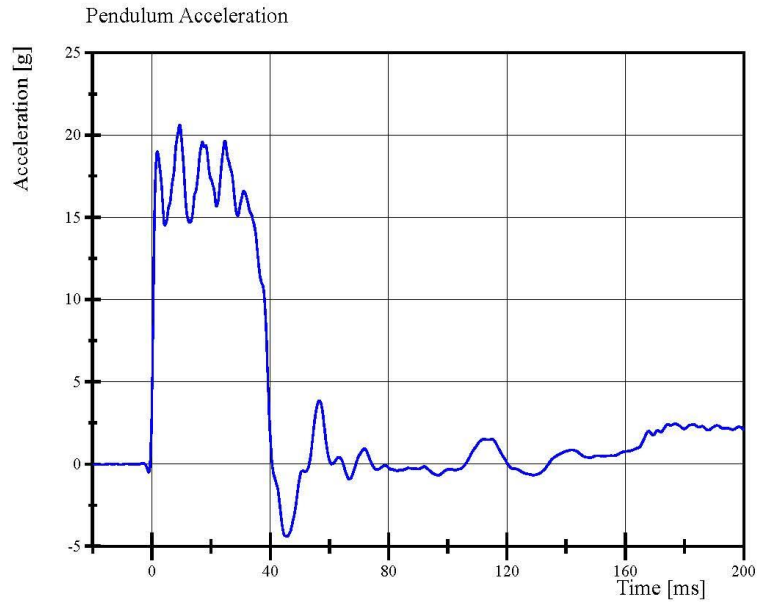


Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024



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

06.26.2024 14:48:18 2002



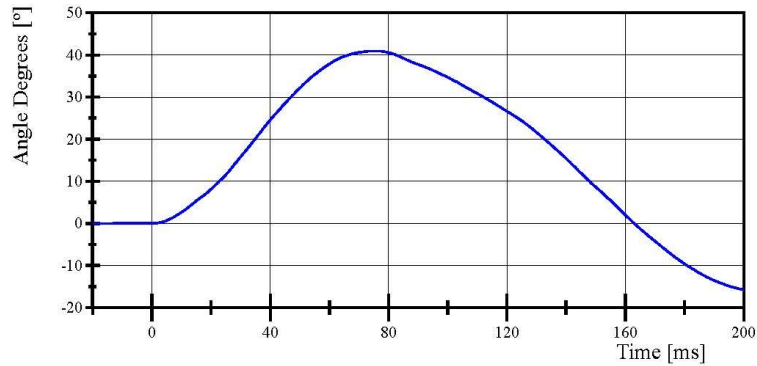
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024

Pot Rotation at the Base of Neck

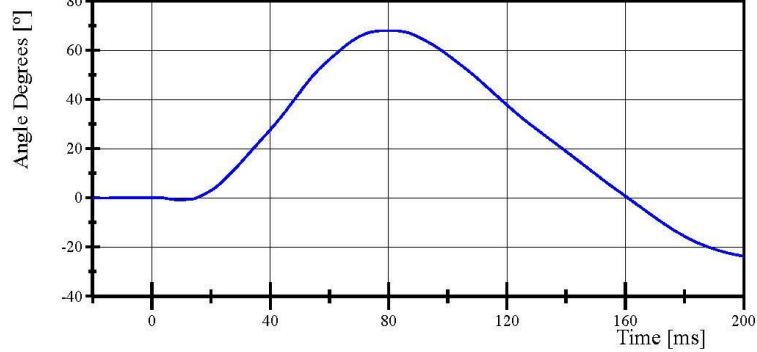


Filter Class: CFC_60

Max: 40.9 ° at 75.4 ms

Min: -15.8 ° at 199.9 ms

Head Rotation at Occypital Condyles

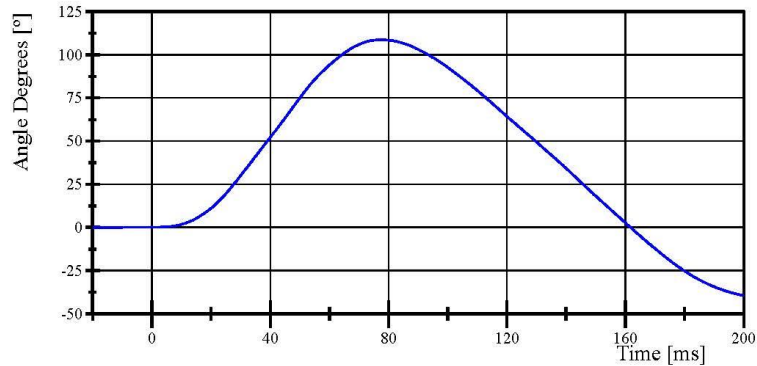


Filter Class: CFC_60

Max: 68.0 ° at 80.2 ms

Min: -23.8 ° at 199.9 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 108.7 ° at 77.4 ms

Min: -39.5 ° at 199.9 ms

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

06.26.2024 14:48:18 2002

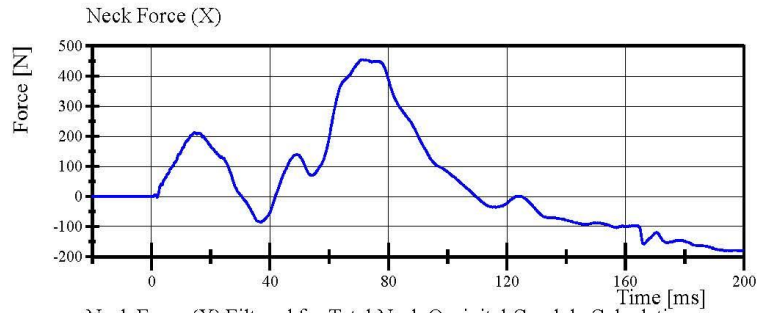


Transportation Research Center Inc.

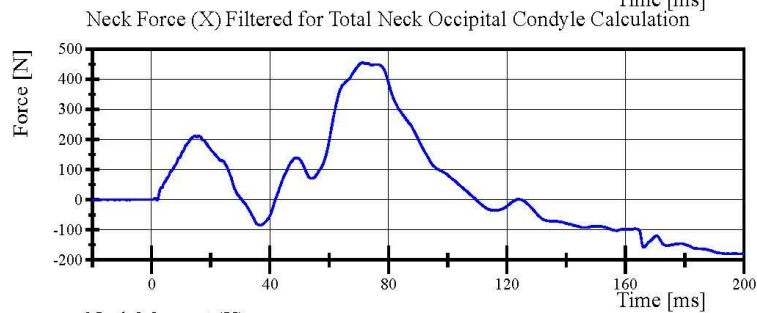
Neck Extension

HIII 5th Serial No. DH1659 Certification No. 19-1

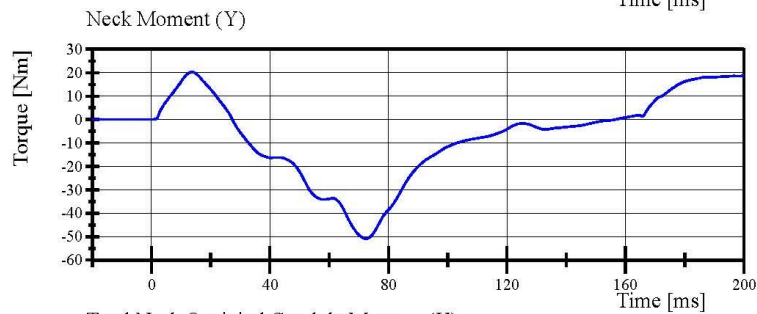
Test Date: 6/26/2024



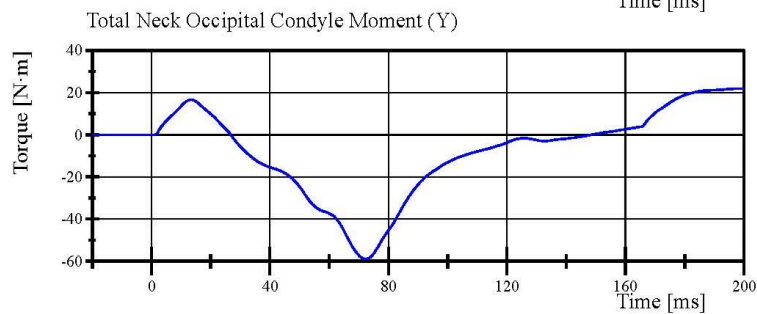
Filter Class: CFC_1000
Max: 455.3 N at 71.2 ms
Min: -180.8 N at 198.2 ms



Filter Class: CFC_600
Max: 455.1 N at 71.3 ms
Min: -180.1 N at 198.2 ms



Filter Class: CFC_600
Max: 20.3 Nm at 13.5 ms
Min: -50.9 Nm at 72.3 ms



Filter Class: Without_(Constar
Max: 21.9 N·m at 199.9 ms
Min: -59.0 N·m at 72.3 ms

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

06.26.2024 14:48:19 2002



Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.822 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,214.1 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-4,240.5 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-52.0 mm	Yes
Internal Hysteresis	69 - 85 %	74.6 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: EE8365

Rib Set S/N: DI5873

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

06.26.2024 13:34:47 441

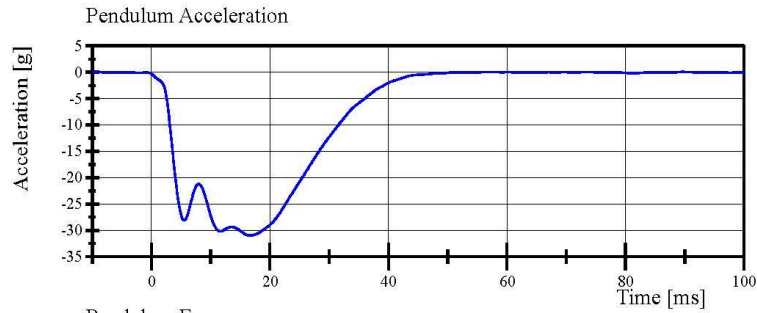


Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. DH1659 Certification No. 19-1

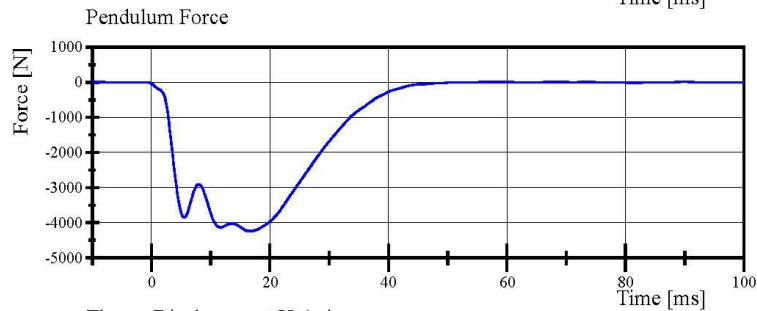
Test Date: 6/26/2024



Filter Class: CFC_180

Max: 0.1 g at 89.7 ms

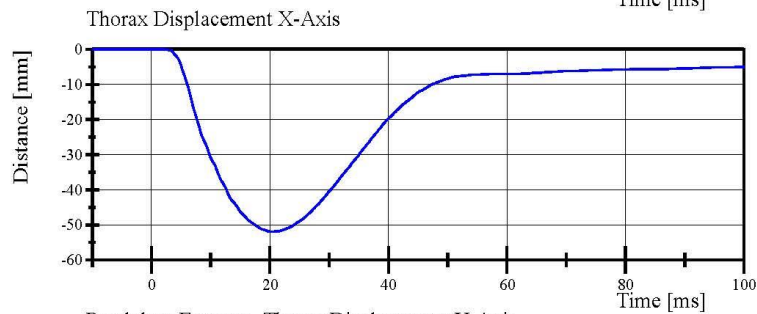
Min: -31.0 g at 16.6 ms



Filter Class: CFC_180

Max: 12.1 N at 89.7 ms

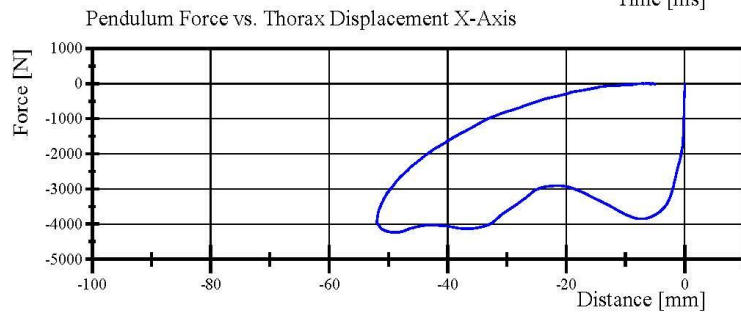
Min: -4,240.5 N at 16.6 ms



Filter Class: CFC_600

Max: 0.0 mm at -7.5 ms

Min: -52.0 mm at 20.2 ms



Filter Class: CFC_180

Max: 12.1 N at -5.5 mm

Min: -4,240.5 N at -48.9 mm

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

06.26.2024 13:35:17 441

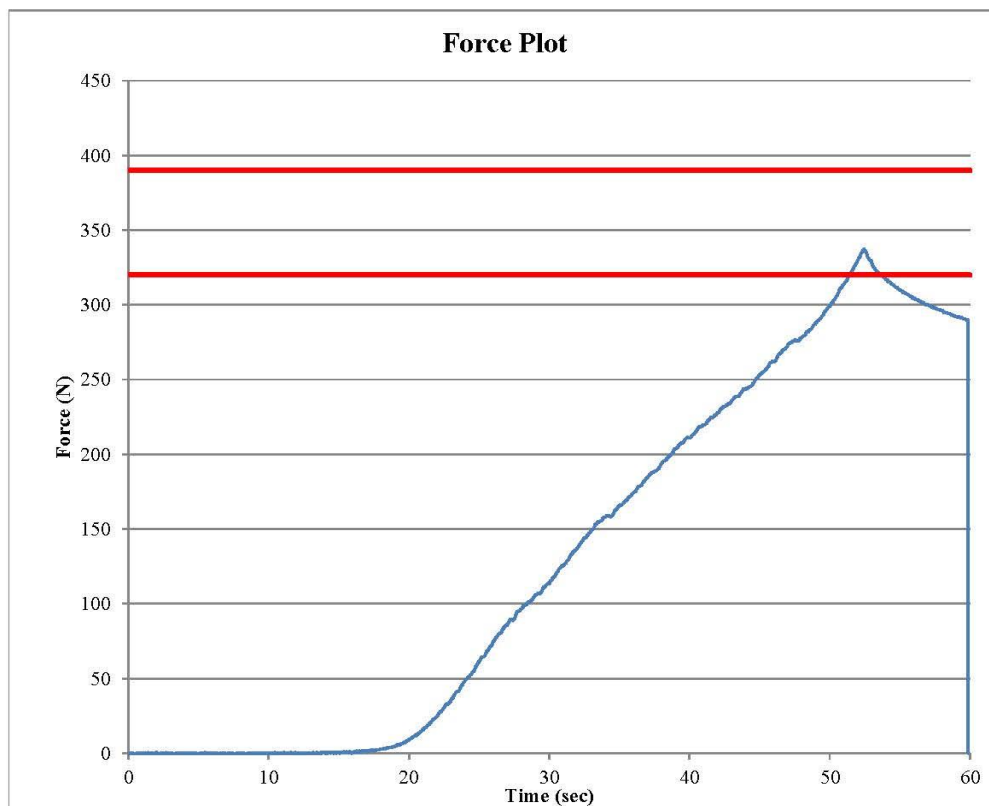


Transportation Research Center Inc.
Hybrid III Small Female Torso Flexion



Customer: NHTSA
Serial Number: DH1659 Date: 6/26/2024
Test Number: 1 Time: 15:22

TEST PARAMETER	SPECIFICATION		TEST RESULTS		
Temperature	18.9	- 25.6	20.8	°C	Pass
Humidity	10	- 70	68	%	Pass
Average Angular Rate	0.5	- 1.5	0.94	deg/sec	Pass
Initial Angle	0	- 20	15.14	deg	Pass
Peak Force at 45.63°	320	- 390	337.4	N	Pass
Final Angle	-8	- 8	-0.52	deg	Pass



Components: Comments:
Jacket S/N: EE8385
Abdomen S/N: EE8393
Lumbar S/N: EW9168

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 19-1
Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	68 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.085 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-4,005.1 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: ED6729

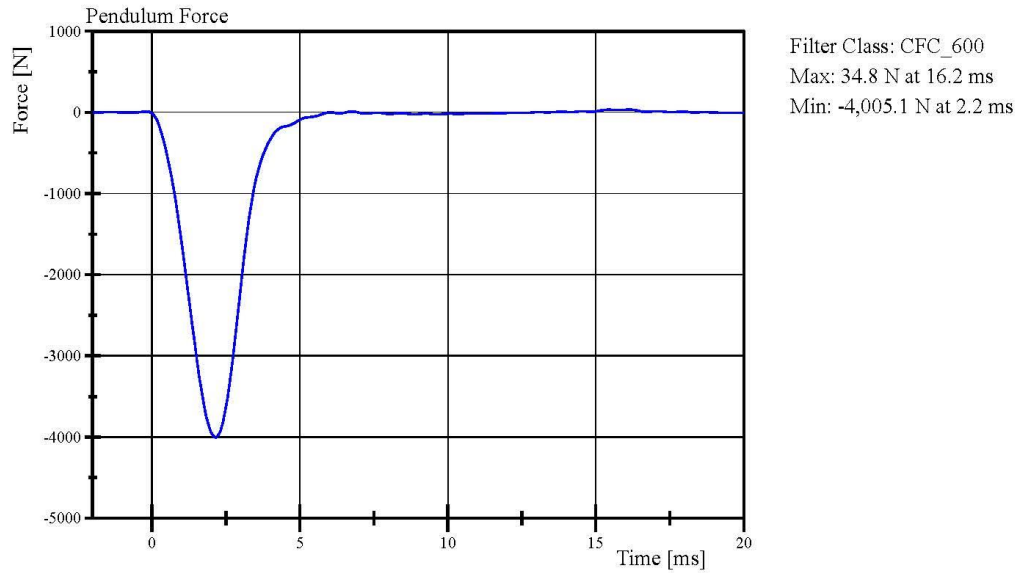
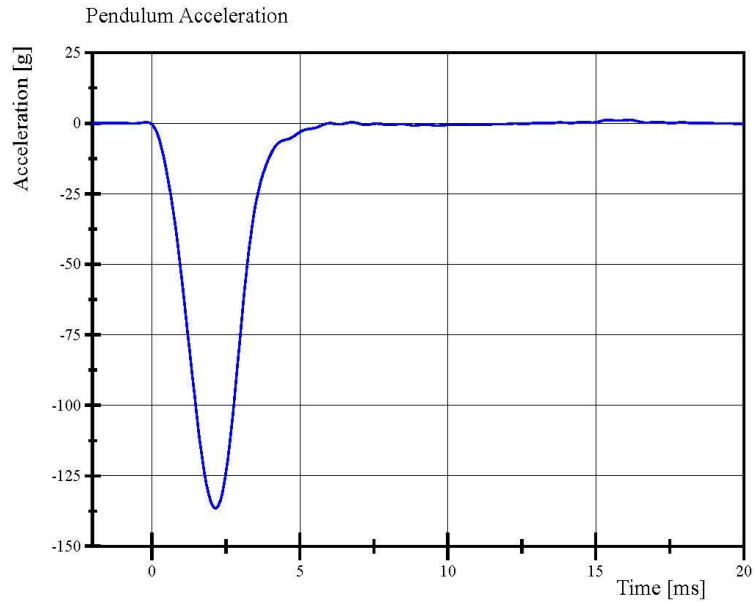
Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

06.26.2024 14:28:10 1854



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 19-1
Test Date: 6/26/2024



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

06.26.2024 14:28:30 1854



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 19-1
Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	67 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.086 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-4,041.2 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: EC5852

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

06.26.2024 14:31:46 1850

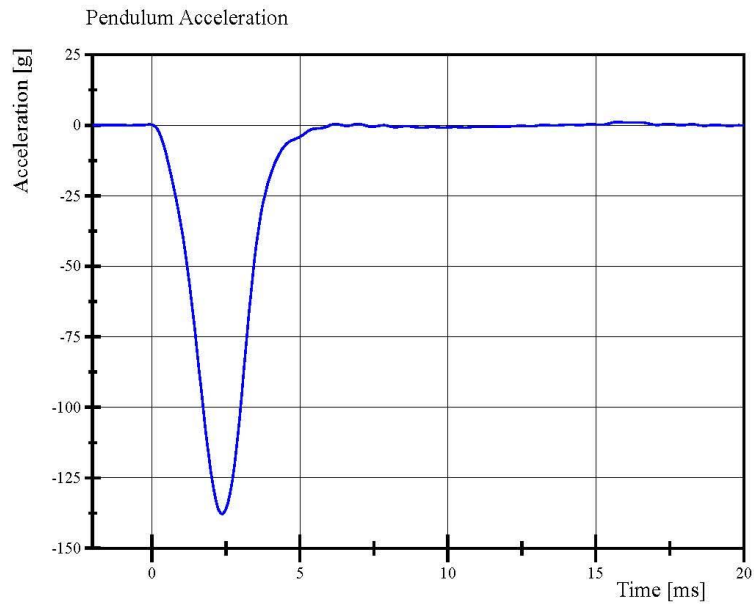


Report Number: DH1659_HFH19

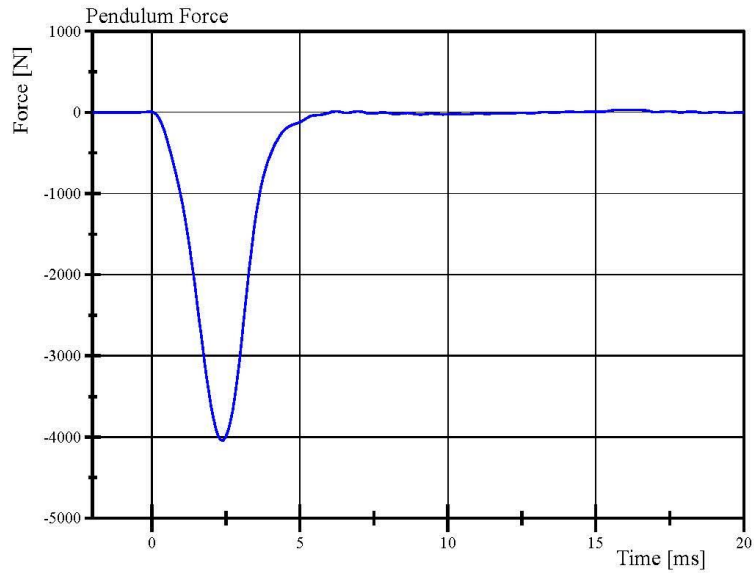
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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. DH1659 Certification No. 19-1
Test Date: 6/26/2024



Filter Class: CFC_600
Max: 1.1 g at 15.8 ms
Min: -137.8 g at 2.4 ms



Filter Class: CFC_600
Max: 32.9 N at 15.8 ms
Min: -4,041.2 N at 2.4 ms

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

06.26.2024 14:32:08 1850



Transportation Research Center Inc.
5720 HIII 5th Dummy
External Dimensions
Serial No. DH1659 Calibration No. 19

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	781	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	86	Yes
D	Hip Pivot from Backline	144.8 - 149.8	148	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	80	Yes
F	Thigh Clearance	119.4 - 134.6	131	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	249	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	286	Yes
J	Elbow Rest Height	182.8 - 203.2	197	Yes
K	Buttock Knee Length	520.7 - 546.1	533	Yes
L	Popliteal Height	355.6 - 376.0	360	Yes
M	Knee Pivot Height	393.7 - 419.1	409	Yes
N	Buttock Popliteal Length	414.0 - 439.4	430	Yes
O	Chest Depth without Jacket	175.3 - 190.5	185	Yes
P	Foot Length	218.5 - 233.7	225	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	473	Yes
S	Head Breadth	137.1 - 147.3	141	Yes
T	Head Depth	177.8 - 188.0	180	Yes
U	Hip Breadth	299.7 - 314.9	305	Yes
V	Shoulder Breadth	350.5 - 365.7	356	Yes
W	Foot Breadth	78.8 - 94.0	85	Yes
X	Head Circumference	528.3 - 548.7	539	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	869	Yes
Z	Waist Circumference	759.5 - 789.9	776	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	345	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Revised 8/10/12



Report Number: DH1659_HFH19

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Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. DH1659 Certification No. 19-1

Test Date: 6/26/2024

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	70 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	257.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	11.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	< 10 %	4.92 %	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: 2864

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

06.26.2024 13:58:21 613

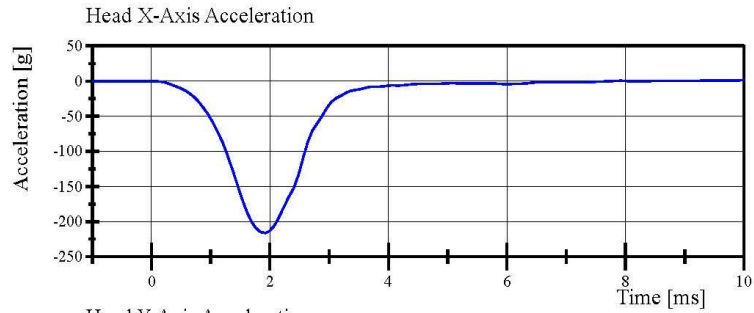


Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. DH1659 Certification No. 19-1

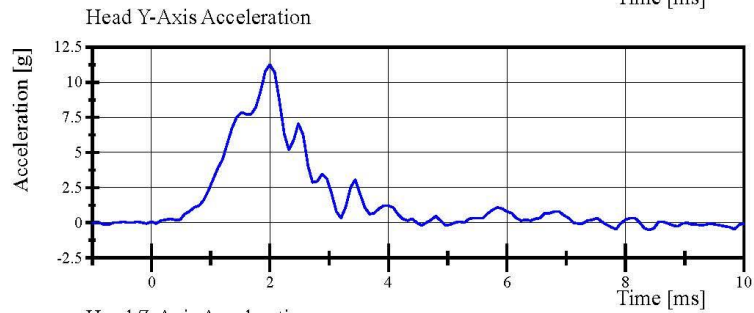
Test Date: 6/26/2024



Filter Class: CFC_1000

Max: 1.6 g at 10.0 ms

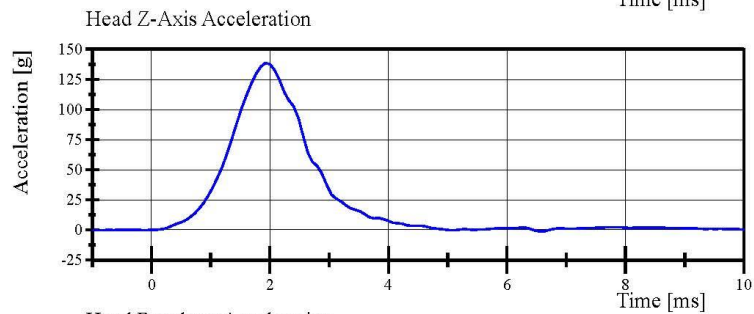
Min: -216.3 g at 1.9 ms



Filter Class: CFC_1000

Max: 11.2 g at 2.0 ms

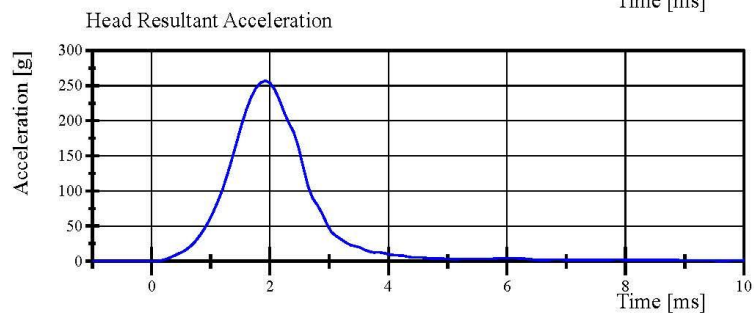
Min: -0.5 g at 8.4 ms



Filter Class: CFC_1000

Max: 138.7 g at 1.9 ms

Min: -1.3 g at 6.6 ms



Filter Class: CFC_1000

Max: 257.1 g at 1.9 ms

Min: 0.0 g at -1.0 ms

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

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APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

TABLE 1 – Driver Dummy Instrumentation

Instrumentation			Axis/Location	Hybrid III 50th S/N 037			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers	Primary		X	T10650	Endevco	19-Apr-2024	
			Y	P94650	Endevco	19-Apr-2024	
			Z	P94622	Endevco	19-Apr-2024	
	Redundant		X	P94431	Endevco	19-Apr-2024	
			Y	P94487	Endevco	19-Apr-2024	
			Z	P94645	Endevco	19-Apr-2024	
Head Angular Rate Sensors			X	ARS14948	DTS	17-Nov-2023	
			Y	ARS14952	DTS	17-Nov-2023	
			Z	ARS14949	DTS	17-Nov-2023	
Upper Neck Load Cell			FX, FY, FZ, MX, MY, MZ	2021	Humanetics	18-Apr-2024	
Chest Accelerometers	Primary		X	P97714	Endevco	19-Apr-2024	
			Y	P61255	Endevco	19-Apr-2024	
			Z	P45008	Endevco	19-Apr-2024	
	Redundant		X	P91177	Endevco	19-Apr-2024	
			Y	P94570	Endevco	19-Apr-2024	
			Z	P91172	Endevco	19-Apr-2024	
Chest Potentiometer			X	CST037	Servo	19-Apr-2024	
Pelvis Accelerometers			X	T11801	Endevco	19-Apr-2024	
			Y	P91876	Endevco	19-Apr-2024	
			Z	P93543	Endevco	19-Apr-2024	
Femur Load Cells	Left	Primary	Z	DI4215-FZ1	Humanetics	19-Apr-2024	
		Redundant	Z	DI4215-FZ2	Humanetics	19-Apr-2024	
	Right	Primary	Z	DI4216-FZ1	Humanetics	19-Apr-2024	
		Redundant	Z	DI4216-FZ2	Humanetics	19-Apr-2024	
Tibia Load Cells	Left	Upper	MX, MY, FZ	3643-94	Denton	18-Apr-2024	
		Lower	MX, MY, FZ	3644-370	Denton	18-Apr-2024	
	Right	Upper	MX, MY, FZ	3643-413	Denton	19-Apr-2024	
		Lower	MX, MY, FZ	3644-401	Denton	18-Apr-2024	
Foot Accelerometers	Left	Rear	X	P90848	Endevco	19-Apr-2024	
			Z	P91498	Endevco	19-Apr-2024	
		Front	Z	P90841	Endevco	19-Apr-2024	
	Right	Rear	X	P93467	Endevco	19-Apr-2024	
			Z	P97619	Endevco	19-Apr-2024	
		Front	Z	P94523	Endevco	19-Apr-2024	
Seat Belt Load Cells			Lap	N/A	N100EA	Measurement Specialties	09-Aug-2023
			Shoulder	N/A	X08013	Measurement Specialties	24-Jan-2024

TABLE 2 – Front Passenger Dummy Instrumentation

Instrumentation			Axis/Location	Hybrid III 5th S/N DH1659		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers	Primary		X	P44972	Endevco	25-Apr-2024
			Y	T11806	Endevco	25-Apr-2024
			Z	P69062	Endevco	25-Apr-2024
	Redundant		X	T11046	Endevco	25-Apr-2024
			Y	P97525	Endevco	25-Apr-2024
			Z	P73228	Endevco	25-Apr-2024
Head Angular Rate Sensors			X	ARS6120	DTS	17-Nov-2023
			Y	ARS10776	DTS	17-Nov-2023
			Z	ARS4732	DTS	17-Nov-2023
Upper Neck Load Cell		FX, FY, FZ, MX, MY, MZ	1874	Humanetics	24-Apr-2024	
Chest Accelerometers	Primary		X	P80855	Endevco	25-Apr-2024
			Y	P93546	Endevco	25-Apr-2024
			Z	P57791	Endevco	25-Apr-2024
	Redundant		X	P73221	Endevco	25-Apr-2024
			Y	T11872	Endevco	25-Apr-2024
			Z	T16784	Endevco	25-Apr-2024
Chest Potentiometer		X	CST3410	Servo	25-Apr-2024	
Pelvis Accelerometers			X	P88005	Endevco	09-May-2024
			Y	P91958	Endevco	25-Apr-2024
			Z	P80721	Endevco	25-Apr-2024
Femur Load Cells	Left	Primary	Z	DT0997-FZ1	Humanetics	24-Apr-2024
		Redundant	Z	DT0997-FZ2	Humanetics	24-Apr-2024
	Right	Primary	Z	DS4140-FZ1	Humanetics	24-Apr-2024
		Redundant	Z	DS4140-FZ2	Humanetics	24-Apr-2024
Tibia Load Cells	Left	Upper	MX, MY, FZ	3643-92	Humanetics	24-Apr-2024
		Lower	MX, MY, FZ	3644-92	Humanetics	24-Apr-2024
	Right	Upper	MX, MY, FZ	3643-484	Humanetics	25-Apr-2024
		Lower	MX, MY, FZ	3644-369	Humanetics	24-Apr-2024
Foot Accelerometers	Left	Rear	X	P90866	Endevco	25-Apr-2024
			Z	P93533	Endevco	25-Apr-2024
		Front	Z	P97890	Endevco	25-Apr-2024
	Right	Rear	X	P97640	Endevco	25-Apr-2024
			Z	P91471	Endevco	25-Apr-2024
		Front	Z	P91907	Endevco	25-Apr-2024
Seat Belt Load Cells		Lap	N/A	R141C7	Measurement Specialties	09-Aug-2023
		Shoulder	N/A	T1210D	Measurement Specialties	25-Jan-2024

TABLE 3 – Vehicle Instrumentation

Instrumentation			Axis	Serial Number	Manufacturer	Calibration Date
Crossmember/Rear Seat Accelerometers	Left	Primary	X	A349899	Measurement Specialties	21-Mar-2024
			Z	A298374	Measurement Specialties	25-Mar-2024
		Redundant	X	A400098	Measurement Specialties	21-Mar-2024
	Right	Primary	X	A378311	Measurement Specialties	21-Mar-2024
			Z	A400106	Measurement Specialties	21-Mar-2024
		Redundant	X	A381834	Measurement Specialties	22-Mar-2024
Engine Accelerometers	Top		X	A381837	Measurement Specialties	21-Mar-2024
	Bottom		X	A349782	Measurement Specialties	22-Mar-2024