FINAL REPORT NUMBER: SINCAP-TRC-22-001

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

FCA US LLC
2022 Jeep Compass
NHTSA NUMBER: M20220302

PREPARED BY:
Transportation Research Center Inc.
10820 State Route 347
P. O. Box B-67
East Liberty, OH 43319

Report Date: May 24, 2022

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NRM-110
1200 New Jersey Ave, SE, Room W43-410
Washington, D.C. 20590

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Report Prepared By: ILO Project Operations Group

Report Approved By: 

John Shultz

Approval Date: May 24, 2022

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date:

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

Date:

Technical Report Documentation Page

1. Report No. SINCAP-TRC-22-001	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact MDB Testing of a 2022 Jeep Compass, NHTSA No.: M20220302		5. Report Date May 24, 2022 6. Performing Organization Code TRC Inc.
7. Author(s) John Shultz, Project Manager		8. Performing Organization Report Number 220317
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319		10. Work Unit No. 11. Contract or Grant No. 693JJ920D000018
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NRM-110) 1200 New Jersey Ave, SE, Room W43-410 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report March 17, 2022 – May 24, 2022 14. Sponsoring Agency Code NRM-110
15. Supplemental Notes		

16. Abstract

This 55 / 28 km/h 90° Moving Deformable Barrier SINCAP Side Impact Test was conducted on the subject 2022 Jeep Compass, in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on March 17, 2022.

The impact velocity of the Moving Deformable Barrier (MDB) was 61.95 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 21.3° C. The target vehicle post-test maximum crush was 222 mm at Level 2. The test vehicle's performance was as follows:

Driver ATD (ES-2re)

Measurement Description	**Units**	**IARV**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	144
Maximum Thoracic Rib Deflection	mm	44	19.6
Total Abdominal Force	N	2500	681.3
Pubic Symphysis Force	N	6000	-1378.7
Lower Spine Acceleration	G	82*	31.5

Passenger ATD (SID-IIs)

Measurement Description	**Units**	**IARV**	**Result**
Head Injury Criteria (HIC_{36})	N/A	1000	212
Lower Spine Resultant Acceleration	g's	82	62.3
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3685.7
Maximum Thoracic Rib Deflection	mm	38*	28.8
Maximum Abdominal Rib Deflection	mm	45*	34.3

* Proposed IARV

The front door on the struck side of the vehicle did not separate from the body at the hinges or latches, the rear struck side door separated from the latch but did not open and the opposite doors did not open during the side impact event.

17. Key Words New Car Assessment Program (NCAP) Side Impact MDB ES-2re SID-IIs	18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division 1200 New Jersey Ave, SE Washington, DC 20590

19. Security Classification (of this report) Unclassified	20. Security Classification (of this page) Unclassified	21. Number of Pages 216	22. Price

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TEST PURPOSE AND PROCEDURE

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test was conducted as part of the MY 2022 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. 693JJ920D000018. The purpose of this test is to generate comparative side impact performance in a 2022 Jeep Compass. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated March 2020.

SECTION 2

SUMMARY OF TEST RESULTS

A 2022 Jeep Compass was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.95 km/h (38.49 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Transportation Research Center Inc. in East Liberty, Ohio, on March 17, 2022. Pre-test and post-test photographs of the test vehicle and the MDB and the dummies (ES-2-re and SID-IIs) are included in this report.

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

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)
Primary and redundant head CG tri-axial accelerometers
Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers
Abdomen forward, middle, and rear y-axis load cells
Lower spine (T12) tri-axial accelerometers
Pubic symphysis y-axis load cell

PASSENGER ATD (SID-IIs)
Primary and redundant head CG triaxial accelerometers
Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers
Abdomen upper rib and lower rib y-axis displacement potentiometers
Lower spine (T12) tri-axial accelerometers
Acetabulum and iliac wing y-axis load cells

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

Dummy injury readings were recorded as follows:

Measurement Description	Driver ATD (ES-2-re)		
	Units	Threshold	Result
Head Injury Criteria (HIC_{36})	N/A	1000	144
Maximum Thoracic Rib Deflection	mm	44	19.6
Combined Abdominal Force	N	2500	681.3
Pubic Symphysis Force	N	6000	-1378.7
Lower Spine (T12) Resultant Acceleration	G	82*	31.5

* Proposed IARV

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC_{36})	N/A	1000	212
Lower Spine (T12) Resultant Acceleration	G	82	62.3
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3685.7
Maximum Thoracic Rib Deflection	mm	38*	28.8
Maximum Abdominal Rib Deflection	mm	45*	34.3

* Proposed IARV

Supplemental Restraint Information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Side Pelvis Airbag	No	N/A	No	N/A
Knee Airbag	Yes	No	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	No	No	N/A
Other Safety Restraint	No	N/A	No	N/A

GENERAL COMMENTS

All doors remained closed throughout the test. No fuel spillage occurred during the impact or the static rollover test which followed. Injury values for both ATDs were within the established performance thresholds.

PASSENGER HEAD AXR – Channel failed

LEFT MDB CONTACT – Channel Failed

All Pre-test photos on “small yellow” placard have incorrect year (Photo Numbers = 30, 32, 33, 35, 36, 38, 39, 40, 41, 59, 61, 62, 63, 65, 68, 92, 93)

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20220302
Model Year	2022
Make	Jeep
Model	Compass
Body Style	MPV
VIN	3C4NJCBB9NT139265
Body Color	Billet Silver Metallic
Odometer Reading (km/mi)	58 mi
Engine Displacement (L)	2.4
Type/No. Cylinders	Straight/4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	FWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

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

Does owner's manual provide instructions to turn off automatic door locks? No

DATA FROM CERTIFICATION LABEL

Manufactured By	FCA US LLC
Date of Manufacture	12-21
Vehicle Type	MPV

GVWR (kg)	1996
GAWR Front (kg)	1076
GAWR Rear (kg)	0928

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

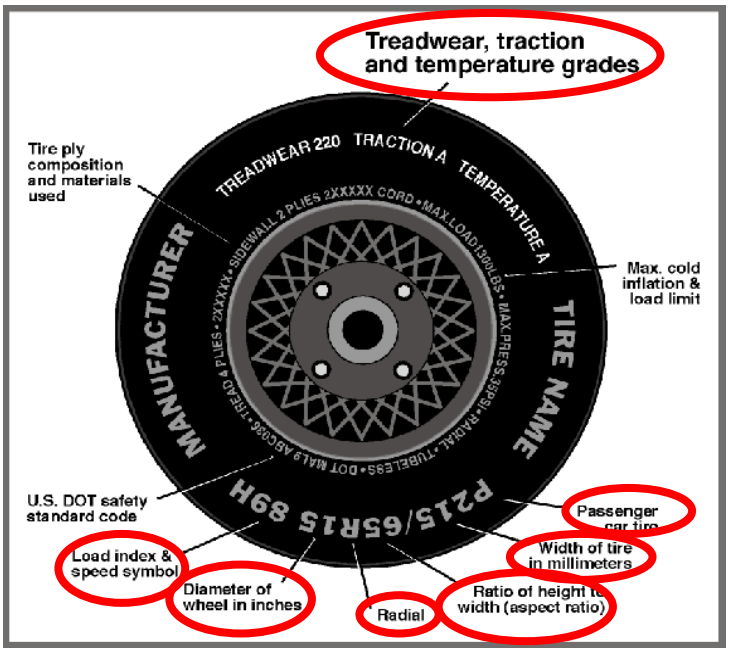
Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity DSC)	2	3	N/A	5
Capacity Weight (VCW) (kg)				374.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				33.8

VEHICLE SEAT TYPE

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

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

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	240	220
Recommended Tire Size	225/60R17	225/60R17
Tire Size on Vehicle	225/60R17	225/60R17
Tire Manufacturer	Firestone	Firestone
Tire Model	Destination LE[2]	Destination LE[2]
Treadwear	520	520
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	99T	99T
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	V641 DE3 4821	V641 DE3 4821
DOT Safety Code Right	V641 DE3 4821	V641 DE3 4821

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	248	248	248	248
Tire Placard	kPa	240	240	220	220
Owner's Manual	kPa	240	240	220	220
As Tested	kPa	240	240	220	220

MDB TIRE SPECIFICATIONS

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

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	464.8	301.2		512.4	363.2		509.0	365.2	
Right	kg	456.6	279.4		452.2	328.0		465.4	321.2	
Ratio	%	61.3	38.7		58.3	41.7		58.7	41.3	
Totals	kg	921.4	580.6	1502.0	964.6	691.2	1655.8	974.4	686.4	1660.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	1502.0	(A)
Actual Weight of 1 P572V ATD (SID-IIs) Dummy Used	kg	125	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	33.8	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1660.8	(A+B+C)

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

TEST VEHICLE ATTITUDES AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement
LF	mm	778	778	Yes
RF	mm	787	785	Yes
RR	mm	790	781	Yes
LR	mm	775	770	Yes
Vehicle CG (Aft of Front Axle)	mm	1088	1099	
Vehicle CG (Left(+)/Right(-) from Longitudinal Centerline)	mm	+40	+44	

***The "As Tested" vehicle attitude measurements must be equal to or within ± 10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. Indicate "Yes" or "No" for "Meets Requirement".

Test height adjustable suspension setting, if applicable: N/A

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Ballast: None	0.0
Removed: non-struck side head rest posts; taillights; rear bumper; non-struck rearview mirror; non-struck door lining + window motor + window + speakers; rear trunk struts; rear wiper + motor	33.5

TEST SURFACE MARKINGS

	Distance from 63° Impact Angle Line (mm)
Fore 25 mm target	890
Aft 25 mm target	884
Pre-Impact Angle Line	360

Parallel Track Target	X Location (mm)	Y Location (mm)
A	-360	-2450
B	-360	1330
C	2085	400
D	1725	-2335

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL(°)		
	Max.	Min.	Mid
Driver Seat	13.1	18.1	15.6
Front Passenger Seat	13.8	18.7	16.2
Front Center Seat*	N/A	N/A	N/A
Struck Side Rear Seat	N/A	N/A	13.7
Non-Struck Side Rear Seat	N/A	N/A	13.4
Rear Center Seat*	N/A	N/A	13.4

* If applicable.

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore/Aft	Forward-Most
Driver Seat	15.6	180	Max	199	204	210
			Mid	174	180	186
			Min	158	163	169
Front Passenger Seat	16.2	179	Max	199	203	207
			Mid	174	179	184
			Min	156	162	167
Front Center Seat*	N/A	N/A	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Struck Side Rear Seat	13.7	185	Max	N/A	N/A	N/A
			Mid	N/A	185	N/A
			Min	N/A	N/A	N/A
Non-Struck Side Rear Seat	13.4	195	Max	N/A	N/A	N/A
			Mid	N/A	195	N/A
			Min	N/A	N/A	N/A
Rear Center Seat*	13.4	214	Max	N/A	N/A	N/A
			Mid	N/A	214	N/A
			Min	N/A	N/A	N/A

* If applicable.

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

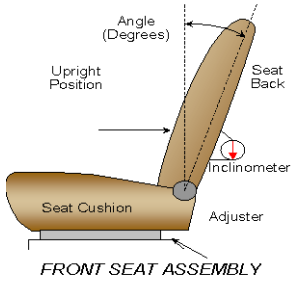
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents	mm	Detent
Driver Seat	220	23	110	12
Front Passenger Seat	220	23	110	12
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	0	Fixed	0	Fixed
Non-Struck Side Rear Seat	0	Fixed	0	Fixed
Rear Center Seat*	0	Fixed	0	Fixed

* If applicable

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated seat back angle. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents	Degrees	Detent
Driver Seat w/ Seated Dummy	69.2	37	1.2	0
Front Passenger Seat	85	57	1.2	0
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat w/ Seated Dummy	0.0	Fixed	19.9	Fixed
Non-Struck Side Rear Seat	0.0	Fixed	19.7	Fixed
Rear Center Seat*	0.0	Fixed	21.2	Fixed

* If applicable

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total # of Positions	Placed in Position #
Driver Seat	5	0
Rear Seat	1	0

HEAD RESTRAINT ADJUSTMENT

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

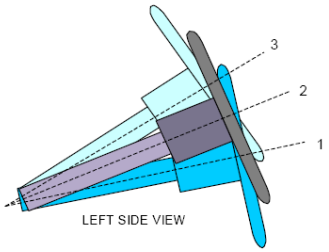
	Total # of Positions	Placed in Position #
Driver Seat	4 Vertical; 7 Horizontal	0 full up; full forward
Rear Seat	2 Vertical; 1 Horizontal	1 full down

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

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022

STEERING COLUMN ADJUSTMENT

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



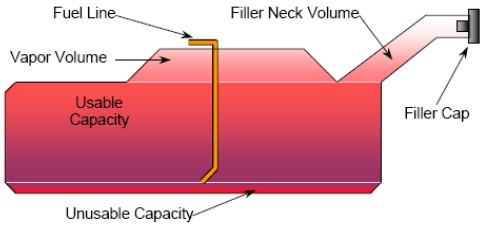
STEERING COLUMN ASSEMBLY

	Degrees	Fore/Aft Position (mm)
Lowermost, Position No. 1	23.0	0
Geometric Center, Position No. 2	25.5	23.5
Uppermost, Position No. 3	28.0	47
Telescoping Steering Wheel Travel		47
Test Position	25.5	23

FUEL PUMP

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

The fuel pump starts pumping fuel when the key is in "ON" position. However, the fuel pump will stop in 5 seconds if the engine is not started.



VEHICLE FUEL TANK ASSEMBLY

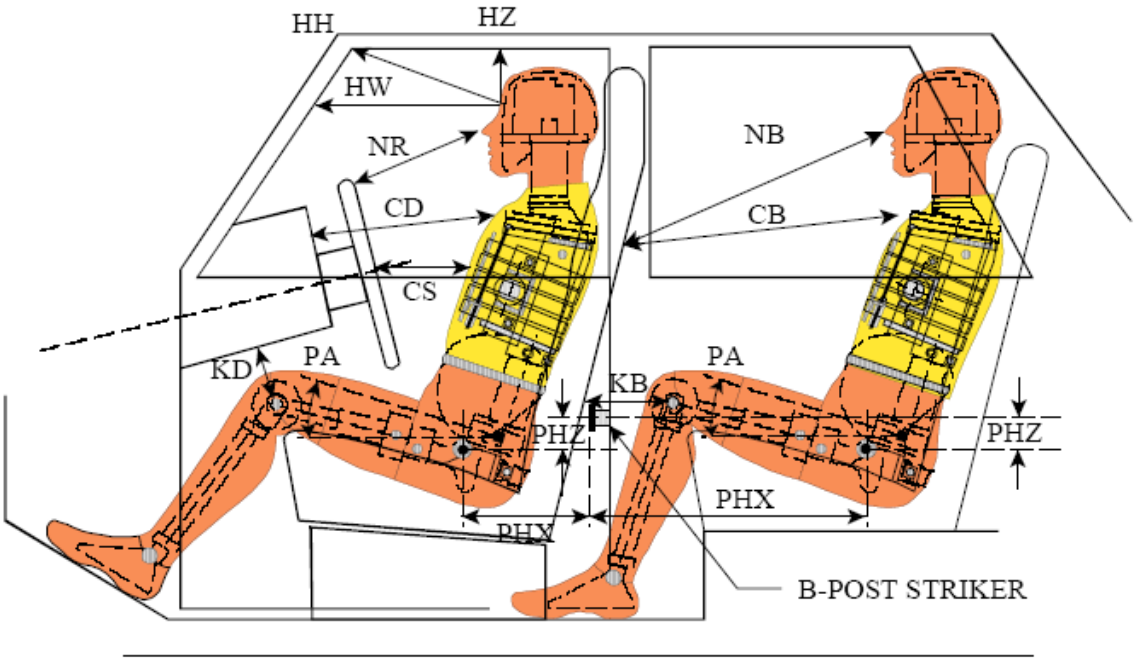
FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	51.1
Usable Capacity of "Optional Tank" (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	51.0
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	47.5
Actual Amount of Solvent Used in Test	47.7
1/3 of Usable Capacity	17.0

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

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022



LEFT SIDE VIEW

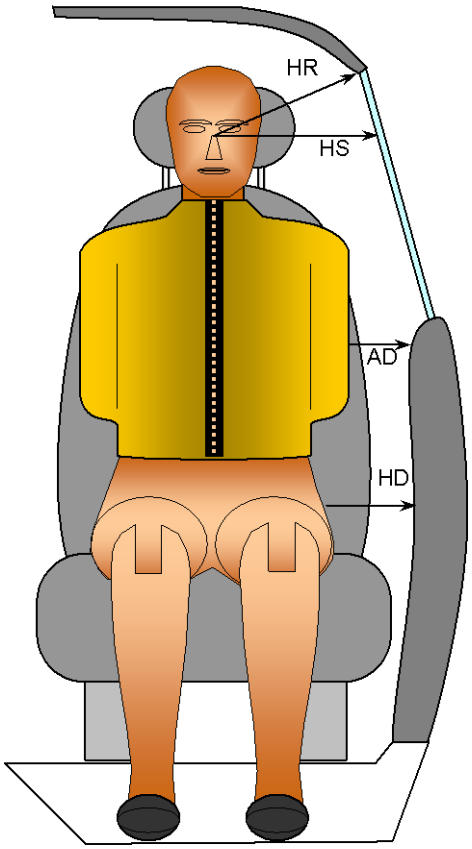
NOTE: 2-DOOR VEHICLE SHOWN. REAR DUMMY PHX & PHZ MEASUREMENTS FOR A 4-DOOR VEHICLE WOULD USE THE C-POST STRIKER AS A REFERENCE POINT

DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle	Length (mm)	Angle
HH		Header to Header	323			
HW		Header to Windshield	658			
HZ	HZ	Head to Roof Liner	177		282	
NR	NB	Nose to Rim/Seat Back	429		560	
CD	CB	Chest to Dash/Seat Back	570		445	
CS		Chest to Steering Wheel	305			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	135	23.0	250	18.0
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	129	24.1	250	17.8
PAX°	PAX°	Pelvic Tilt Angle X		0.2		0.4
	PAY°	Pelvic Tilt Angle Y				21.5
PHX	PHX	Hip Point to Striker (X-Axis)	170		224	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	125		210	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022

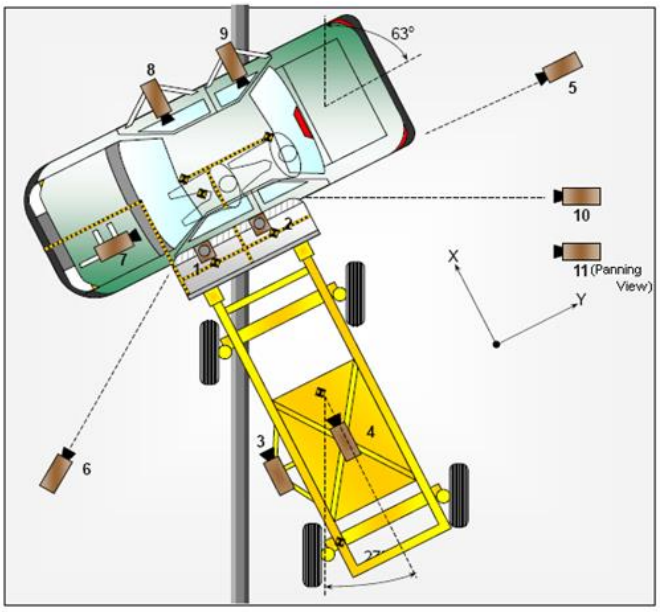


FRONT VIEW OF DUMMY

Code	Description	Units	Driver	Passenger
HR	Head to Side Header	mm	233	295
HS	Head to Side Window	mm	382	375
AD	Arm to Door	mm	109	150
HD	H-Point to Door	mm	163	152

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	-1580	0	-5680	20	1000
2	Overhead Close-up	-1392	0	-5970	20	1000
3	Left Impact Point (MDB)	-1520	-910	-865	25	1000
4	Side Overall (MDB)	-2250	0	-1425	8.5	1000
5	Rear	0	8960	-1430	20	1000
6	Left Front	-1950	-3124	-1425	20	1000
7	Driver Front (OB)				25	1000
8	Driver Side (OB)				8.5	1000
9	Passenger Side (OB)				8.5	1000
10	Real-time Left Rear				Zoom	30
11	Real-time Inrun				Zoom	30

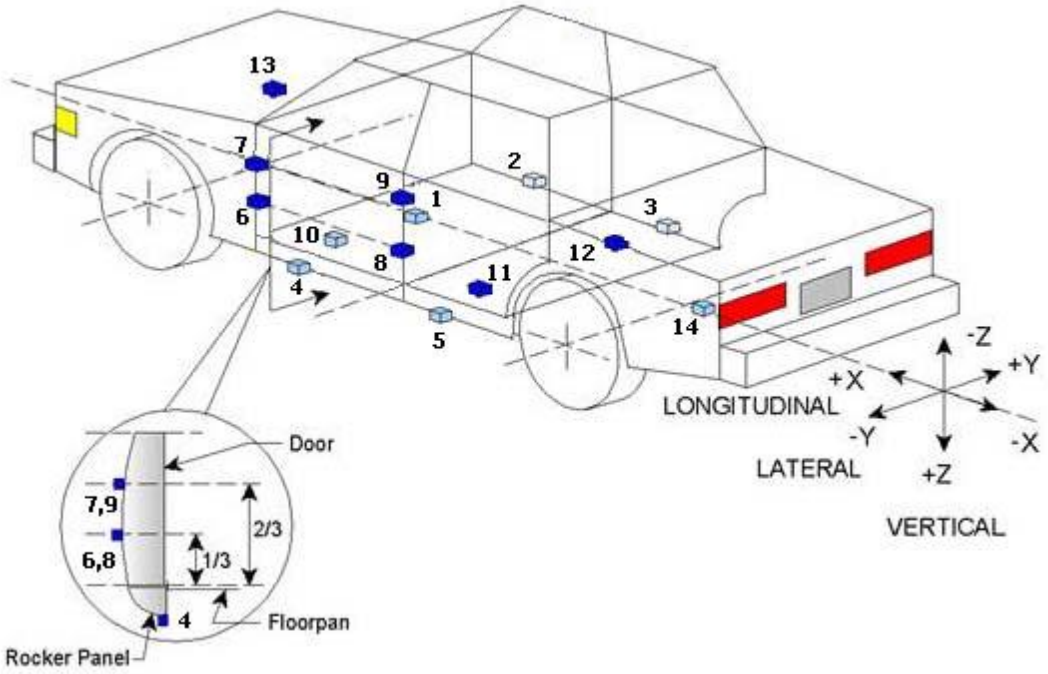
Reference: Impact Point projected to Ground; +X = To Front of MDB +Y = To Right of MDB; +Z = Down
*All measurements accurate to ± 6 mm.
If applicable, explain why camera(s) did not operate as intended: N/A

INSTRUMENTATION

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

DATA SHEET NO. 6
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



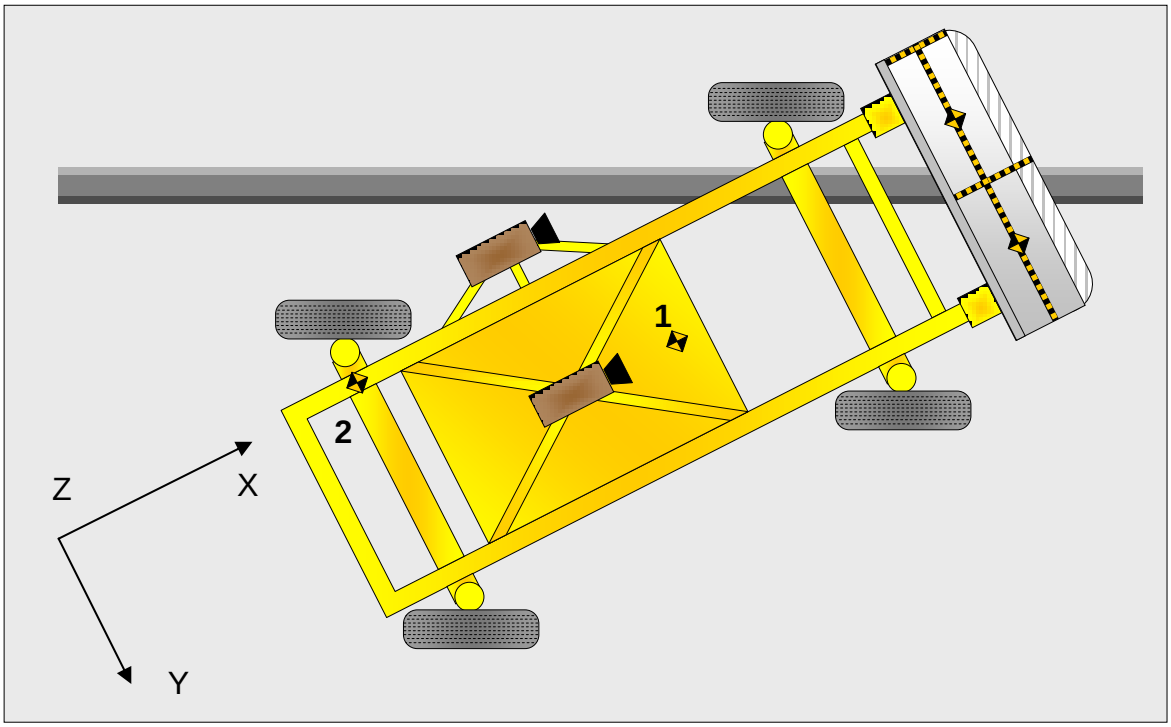
TEST VEHICLE ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2660	660	-405
2	Right Sill at Front Seat	2585	668	-393
3	Right Sill at Rear Seat	1760	711	-412
4	Left Sill at Front Door	2569	-668	-401
5	Left Sill at Rear Door	1750	-711	-410
6	A-Post Lower	2995	-850	-595
7	A-Post Middle	3000	-731	-902
8	B-Post Lower	1965	-720	-663
9	B-Post Middle	1926	-720	-1024
10	Front Seat Track	2030	-555	-395
11	Rear Seat Structure	1382	-655	-459
12	Right Rear Occ. Compartment	1360	655	-476
13	Engine Block	3672	255	-890
14	Rear Above Axle	1020	0	-523

Reference: X - Rear surface of vehicle (+ forward)
Y - Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	MDB CG	-2120	0	-530
2	MDB Rear	-2655	-650	-610

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

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES2-re)	Rear Seat Dummy (SID-IIs)
Face	SCAB	SCAB
Top of Head	Side Header	SCAB
Left Side of Head	SCAB	SCAB
Back of Head	Head Restraint	None
Left Shoulder	SAB	Door Panel
Upper Torso	SAB	Door Panel
Lower Torso	SAB	Door Panel
Left Hip	SAB	Seat Cushion Bolster
Left Knee	Door Panel	Door Panel

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Trunk Lid
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	Yes	No	No	No
Jammed Shut	Yes	No	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	N/A	No	N/A
Seat Disengagement from Floor pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Good
Sill Separation	None
Windshield Damage	None
Side Window Damage	Struck side passenger blown out
Other Notable Effects	Latch separation from striker, but door not open; see extra pictures

DATA SHEET NO. 8 (CONTINUED)
POST TEST OBSERVATIONS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2632
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		375
Actual Impact Point (Aft of Front Axle)	mm		364
Horizontal Offset (+ forward / - rearward)	mm	+/- 50 of Intended Impact point	+11
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact point	+2

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel Base of Framework Carriage	2591
C.G. Location aft of Front Axle	1104

MDB WEIGHTS

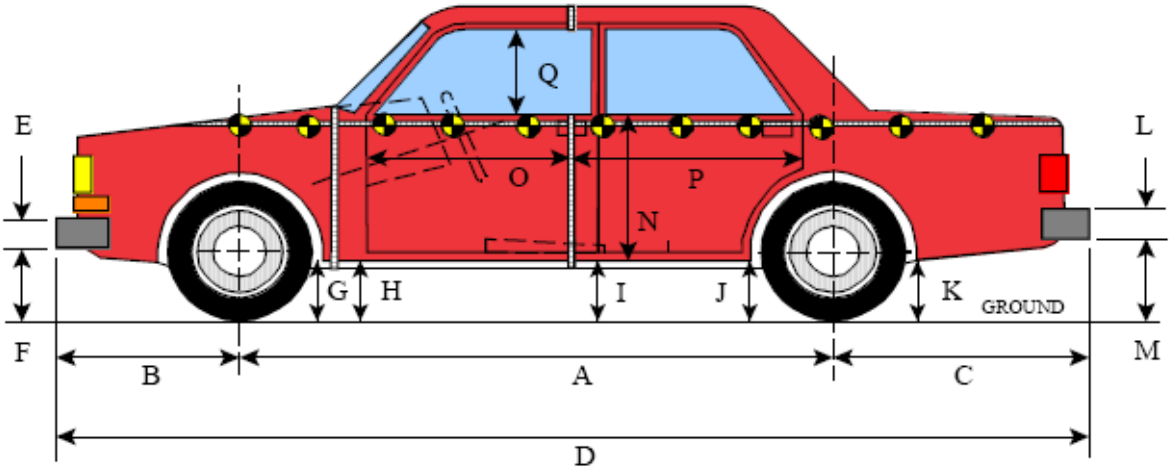
	Units	Front Axle	Rear Axle	Total
Left	kg	415.2	268.2	683.4
Right	kg	366.2	311.8	678.0
Ratio	%	57.4	42.6	100.0
Totals	kg	781.4	580.0	1361.4

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.95
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.95
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	27

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



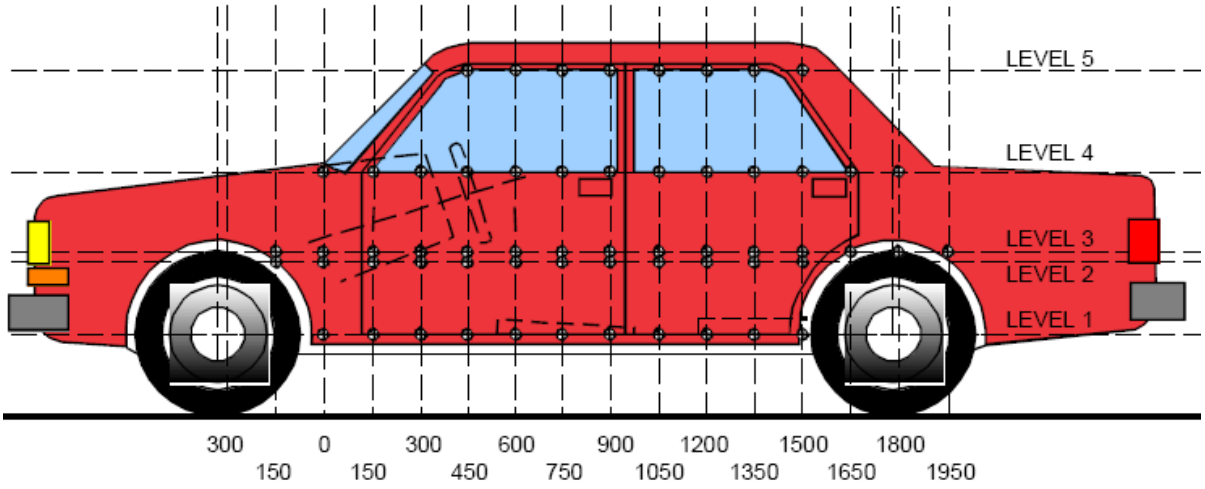
LEFT SIDE VIEW
All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3mm

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2632	2618	14
B	Front Axle to Front Surface of Vehicle	915	915	0
C	Rear Axle to Rear Surface of Vehicle	850	850	0
D	Total Length at Centerline	4397	4405	-8
E	Front Bumper Thickness	110	110	0
F	Front Bumper Bottom to Ground	500	515	-15
G	Sill Height at Front Wheel Well	377	414	-37
H	Sill Height at Front Door Leading Edge	378	444	-66
I	Sill Height at B-Pillar	404	477	-73
J1	Sill Height at Rear Wheel Well	430	515	-85
J2	Pinch Weld Height at Rear Wheel Well	260	285	-25
K	Sill Height Aft of Rear Wheel Well	488	520	-32
L	Rear Bumper Thickness	105	105	0
M	Rear Bumper Bottom to Ground	565	604	-39
N	Sill Height to Window Bottom Sill	810	752	58
O	Front Door Leading Edge to Impact CL	732	704	28
P	Rear Door Trailing Edge to Impact CL	1295	1205	90
Q	Front Window Opening	410	416	-6
R	Right Side Length	4315	4330	-15
S	Left Side Length	4305	4330	-25
T	Vehicle Width	1805	1794	11
U	Front Wheel Track Width	1530	1530	0
V	Rear Wheel Track Width	1530	1530	0

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance From Impact
1	Sill Top	420	137	1650
2	Driver Hip Point	676	222	1650
3	Mid-Door	739	216	1650
4	Window Sill	1064	77	1350
5	Window Top	1545	5	1350

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

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

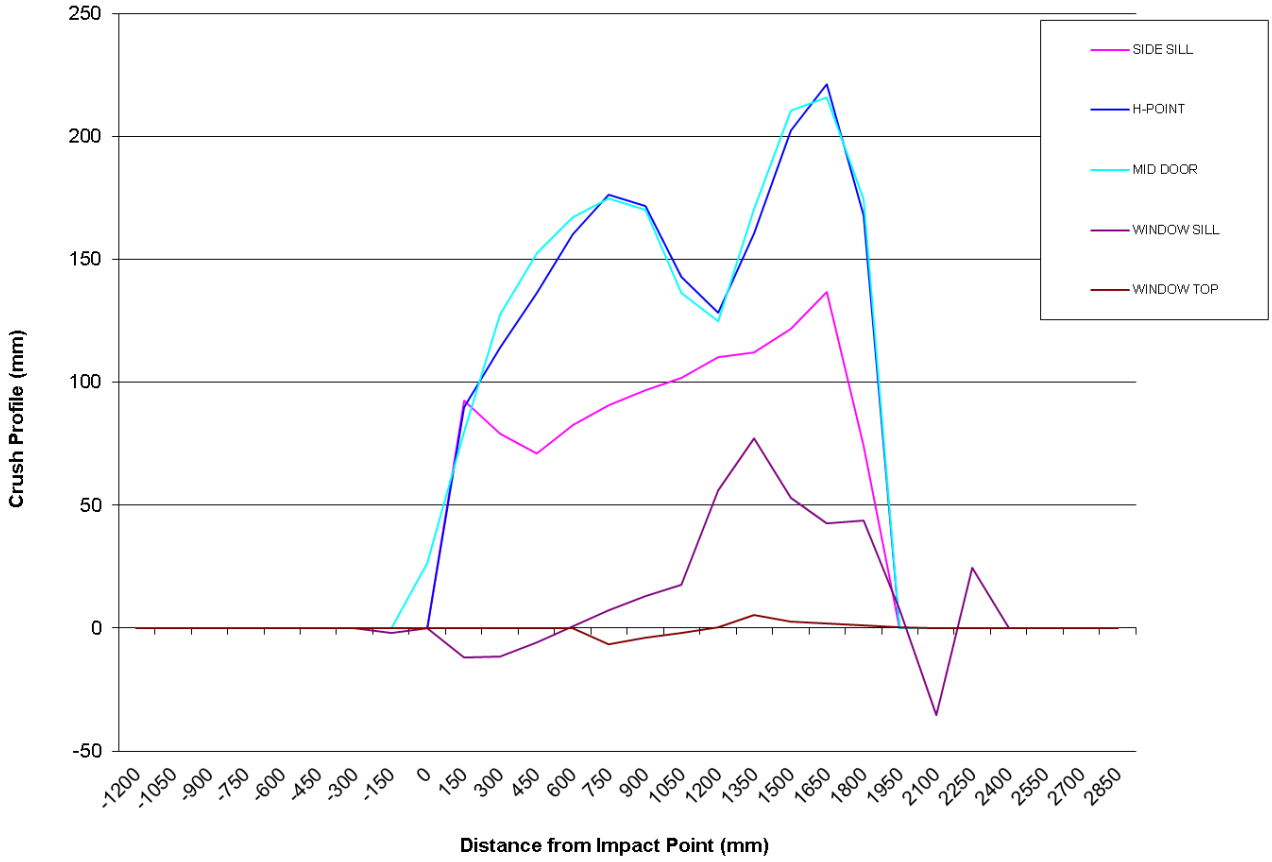
EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-150	0	0	0	777	0	0	0	0	779	0	0	0	0	-2	0
0	0	0	905	795	0	0	0	879	795	0	0	0	26	0	0
150	883	895	894	808	0	790	805	814	820	0	93	90	80	-12	0
300	856	887	889	821	0	777	773	762	833	0	79	114	127	-12	0
450	845	887	890	829	0	774	750	737	834	0	71	137	153	-5	0
600	848	888	891	835	0	765	728	724	834	0	83	160	167	1	0
750	851	888	891	841	597	760	712	716	834	603	91	176	175	7	-6
900	854	888	891	847	621	757	716	721	833	625	97	172	170	14	-4
1050	855	887	890	851	622	753	744	754	834	624	102	143	136	17	-2
1200	853	884	888	855	622	743	755	763	799	621	110	129	125	56	1
1350	850	881	885	857	620	737	720	715	780	615	113	161	170	77	5
1500	849	879	882	859	617	728	677	671	806	614	121	202	211	53	3
1650	867	885	886	859	613	730	663	670	817	611	137	222	216	42	2
1800	879	900	900	867	606	805	732	725	823	605	74	168	175	44	1
1950	0	0	0	882	599	0	0	0	874	598	0	0	0	8	1
2100	0	0	0	849	589	0	0	0	885	589	0	0	0	-36	0
2250	0	0	0	843	0	0	0	0	819	0	0	0	0	24	0

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

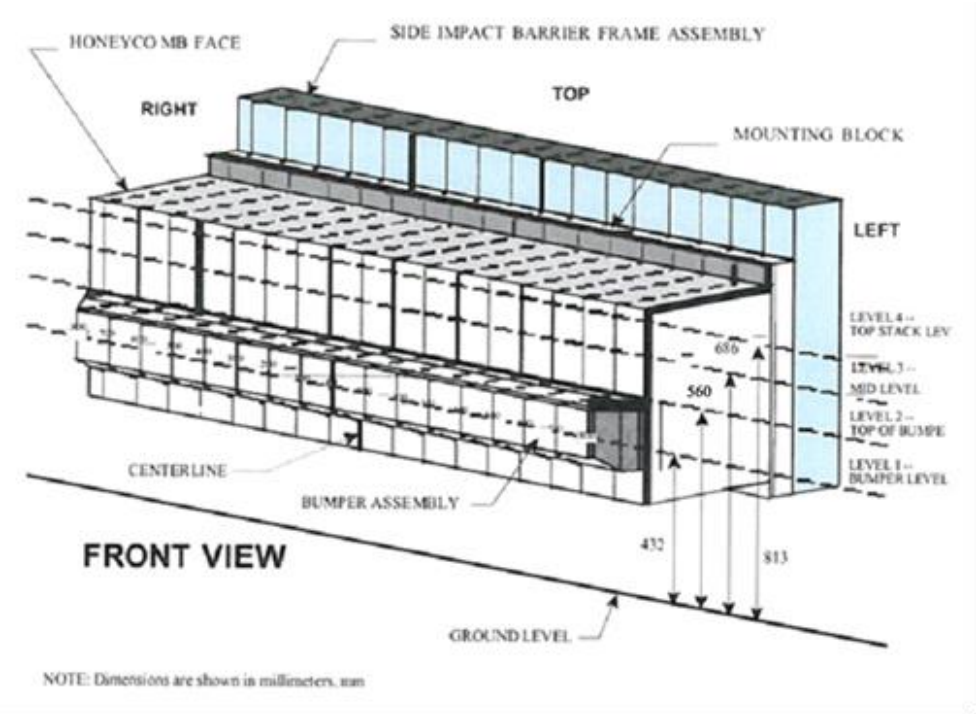
DATA SHEET NO. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2022 Jeep Compass
Test Program: SINCAP Side Impact
NHTSA No.: M20220302
Test Date: 3/17/2022



MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

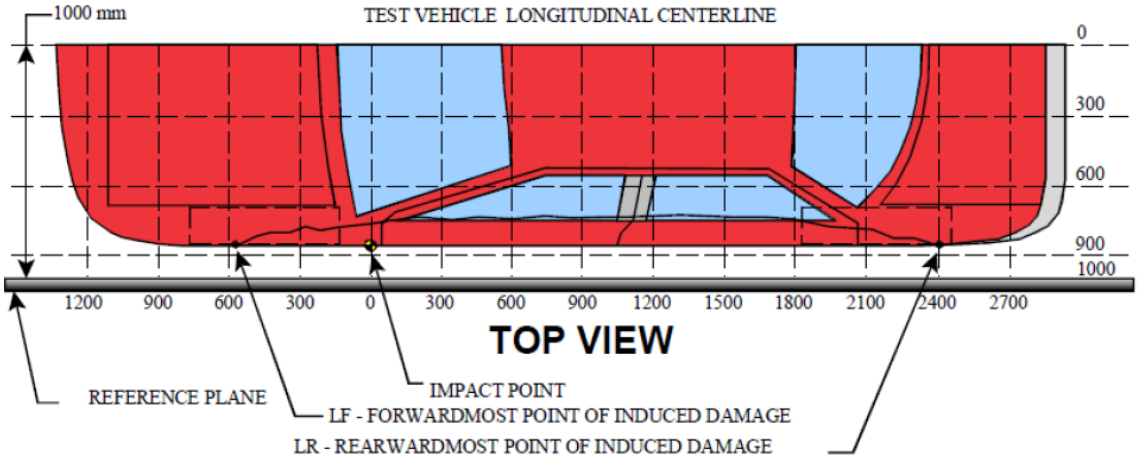
Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Right	243
B	Top of Bumper	560	800	Left	152
C	Mid-Level	686	800	Left	136
D	Top of Stack	813	800	Left	155

DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
1	178	170	168	168	168	168	168	168	169	170	171	172	173	174	177	184	188
2	78	70	71	73	77	80	80	77	74	73	74	74	77	80	86	99	126
3	39	21	26	45	74	95	95	64	41	27	24	28	35	46	61	93	127
4	85	48	34	44	76	119	118	87	71	55	61	56	61	67	74	109	158

DATA SHEET NO. 13
VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022



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

VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	2250	4	819	843	24
2	1800	3	725	900	175
3	1350	3	715	885	170
4	900	2	716	888	172
5	450	3	737	890	153
6[1]	0	3	879	905	0

MDB DAMAGE PROFILE DISTANCES

DPD	Distance From Center of MDB	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	800 mm Left of Center	1	283	471	188
2	500 mm Left of Center	1	310	484	174
3	200 mm Left of Center	1	314	485	171
4	200 mm Right of Center	1	317	485	168
5	500 mm Right of Center	1	317	485	168
6	800 mm Right of Center	1	288	466	178

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

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022

Test Time: 16:07 **Temperature:** 21.3°C

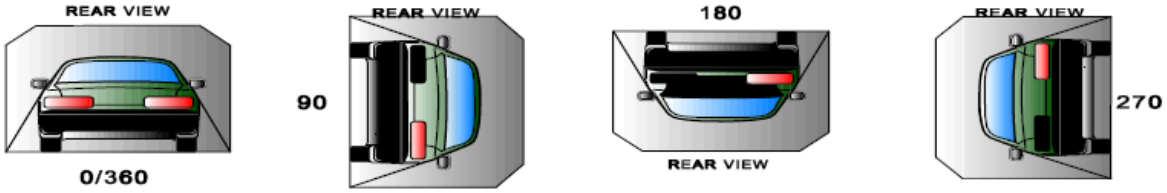
A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable is 1 ounce)

B. For the 5 minute period after motion ceases: 0 oz.
(Maximum allowable is 5 ounces)

C. For the following 25 minutes: 0 oz.
(Maximum allowable is 1 ounce/minute)

D. Spillage Details: None

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

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

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

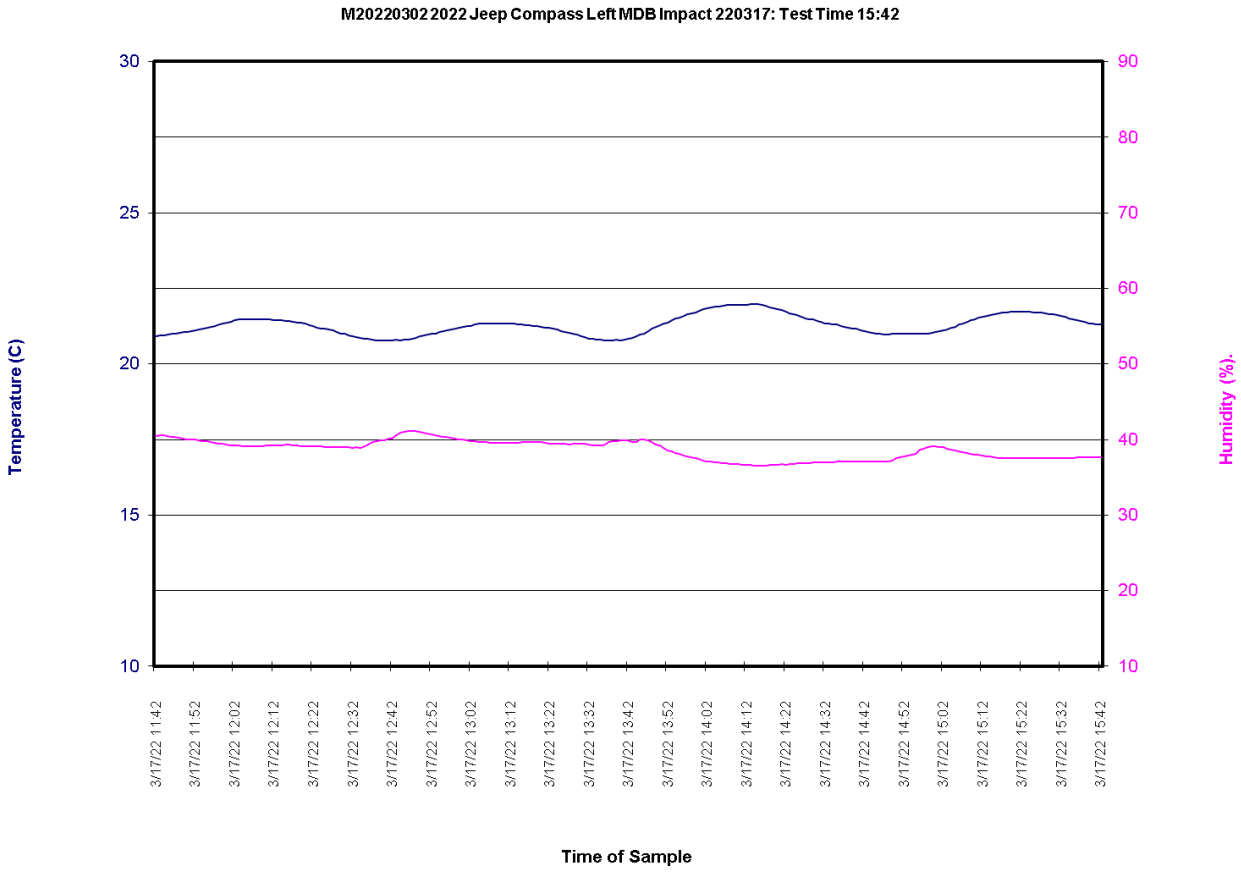
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0 to 90	0	0	0	N/A
90 to 180	0	0	0	N/A
180 to 270	0	0	0	N/A
270 to 360	0	0	0	N/A

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

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

Test Vehicle: 2022 Jeep Compass NHTSA No.: M20220302
Test Program: SINCAP Side Impact Test Date: 3/17/2022



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

[1] "small yellow" placard have incorrect year

TABLE OF PHOTOGRAPHS (CONTINUED)

[1] "small yellow" placard have incorrect year

TABLE OF PHOTOGRAPHS (CONTINUED)

[1] "small yellow" placard have incorrect year

TABLE OF PHOTOGRAPHS (CONTINUED)

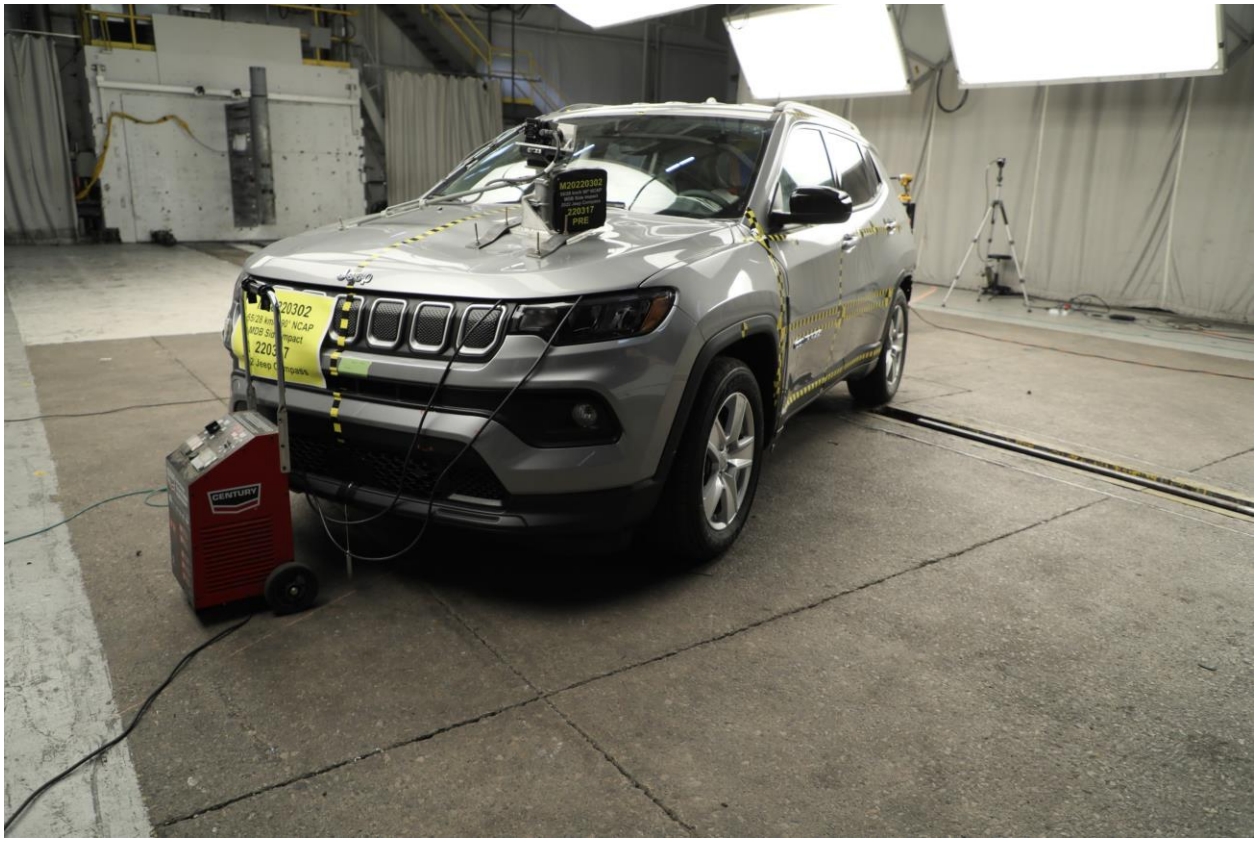
[1] "small yellow" placard have incorrect year

001 As-Delivered Right Front ¾ View of Test Vehicle

002 As-Delivered Left Rear ¾ View of Test Vehicle

003 Pre-Test Frontal View of Test Vehicle

004 Post-Test Frontal View of Test Vehicle



005 Pre-Test Left Front ¾ View of Test Vehicle

006 Post-Test Left Front ¾ View of Test Vehicle

007 Pre-Test Left Side View of Test Vehicle

008 Post-Test Left Side View of Test Vehicle

009 Pre-Test Left Rear ¾ View of Test Vehicle

PHOTO NOT AVAILABLE

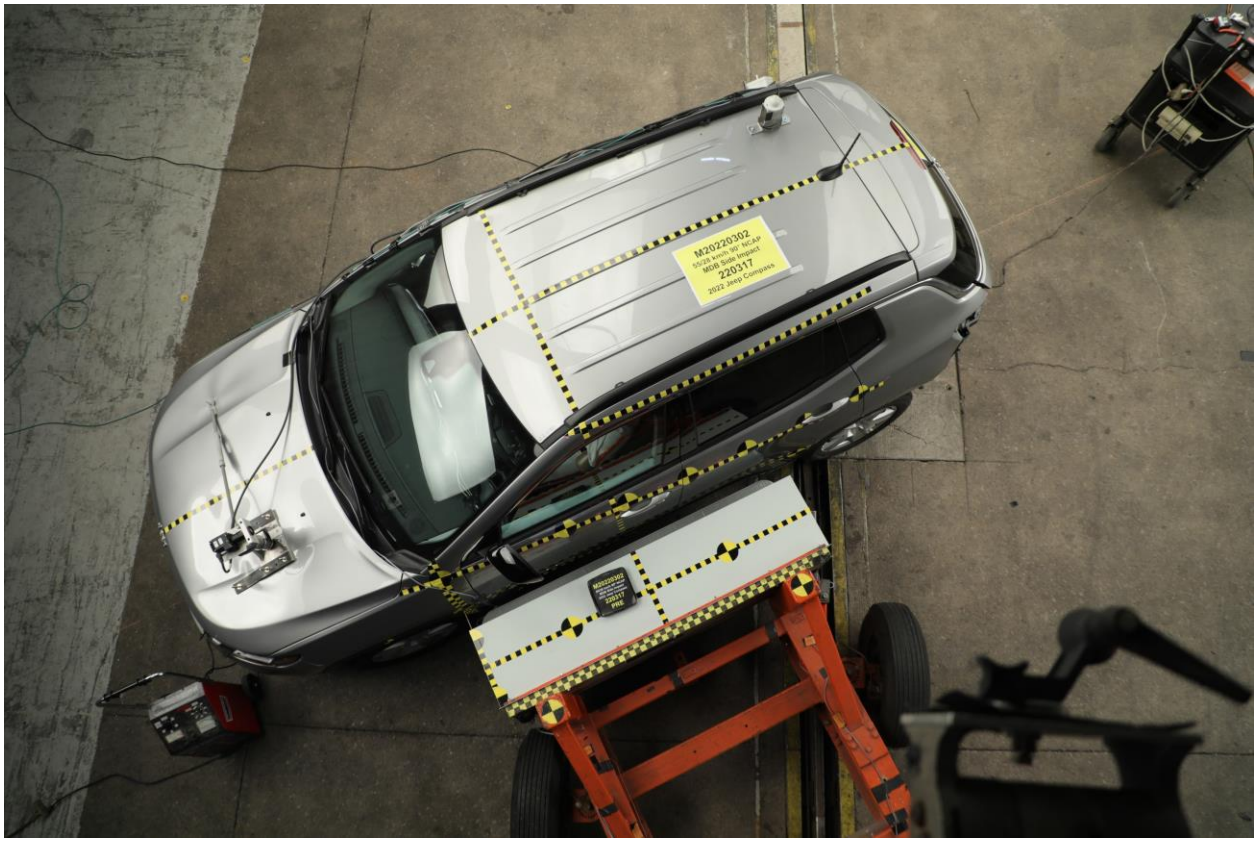
010 Post-Test Left Rear ¾ View of Test Vehicle

011 Pre-Test Rear View of Test Vehicle

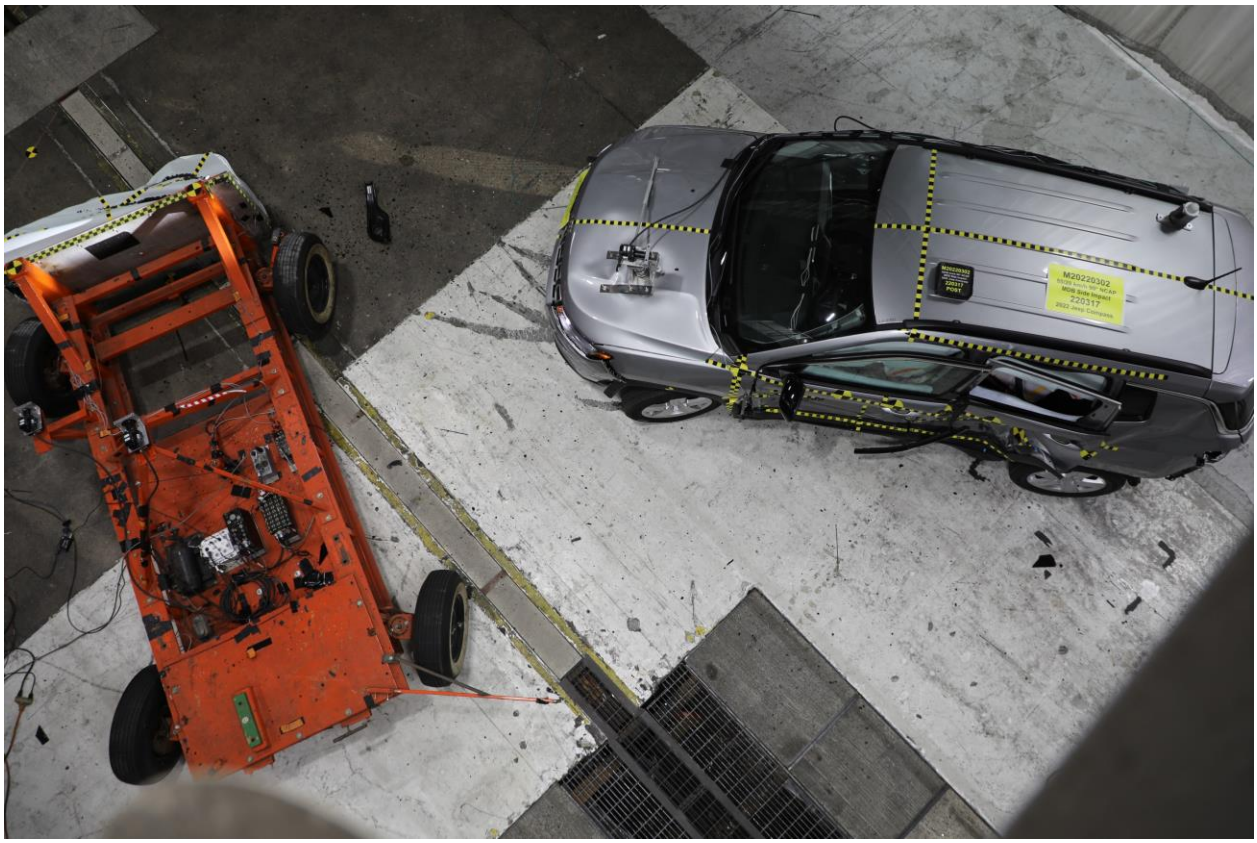
012 Post-Test Rear View of Test Vehicle

013 Pre-Test Right Side View of Test Vehicle

014 Post-Test Right Side View of Test Vehicle



015 Pre-Test Overhead View of Test Area



016 Post-Test Overhead View of Test Area

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

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

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

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

021 Pre-Test Left Front Door Latch Close-Up

022 Post-Test Left Front Door Latch Close-Up

023 Pre-Test Left Rear Door Latch Close-Up

024 Post-Test Left Rear Door Latch Close-Up

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

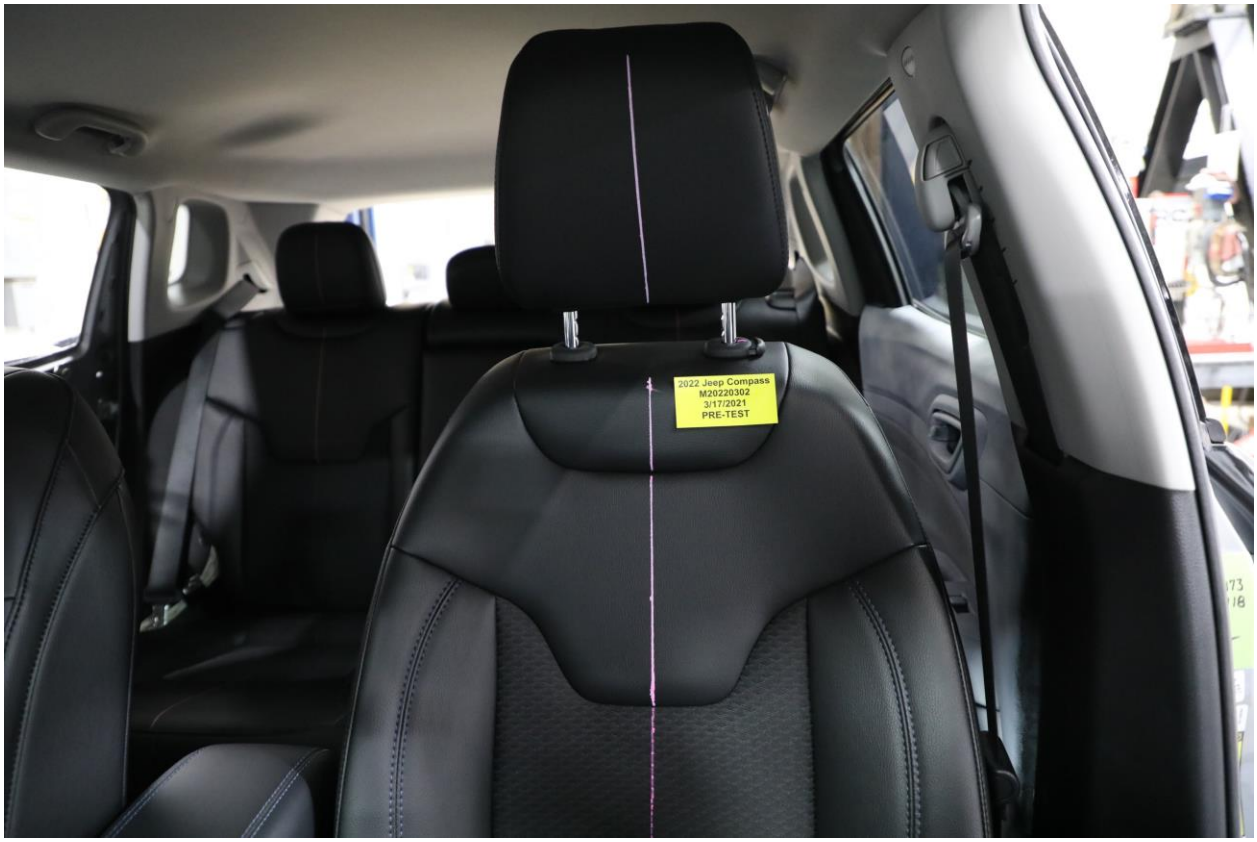
026 Post-Test Front Close-Up View of Driver Dummy

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

Intentionally Left Blank

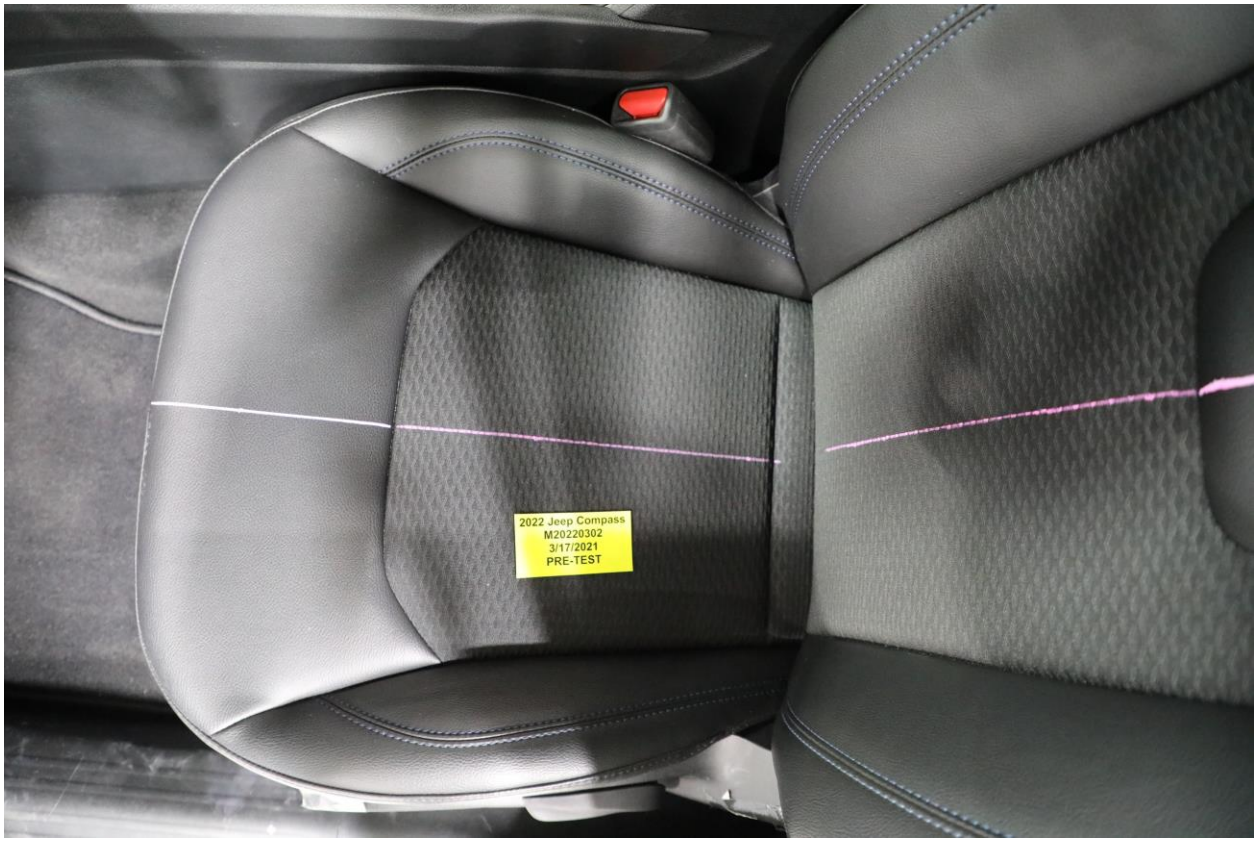
028 Pre-Test Left Side View of Driver Dummy Shoulder and Door Top

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



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

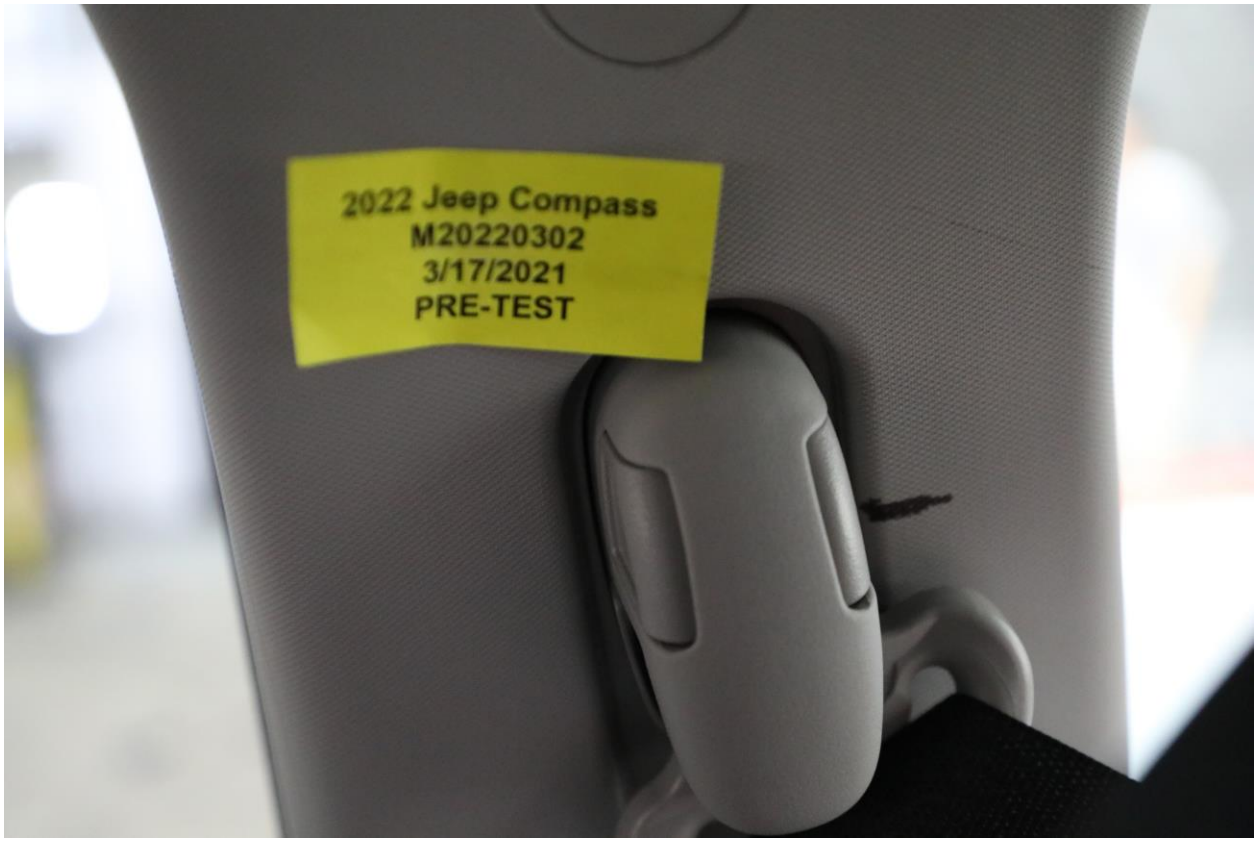
031 Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



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

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

034 Pre-Test Placement of Driver's Dummy Feet



035 Pre-Test View of Belt Anchorage for Driver Dummy

036 Pre-Test Left Side View of Steering Wheel

037 View of Disengaged Parking Brake

038 Pre-Test View of Parking Brake

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

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

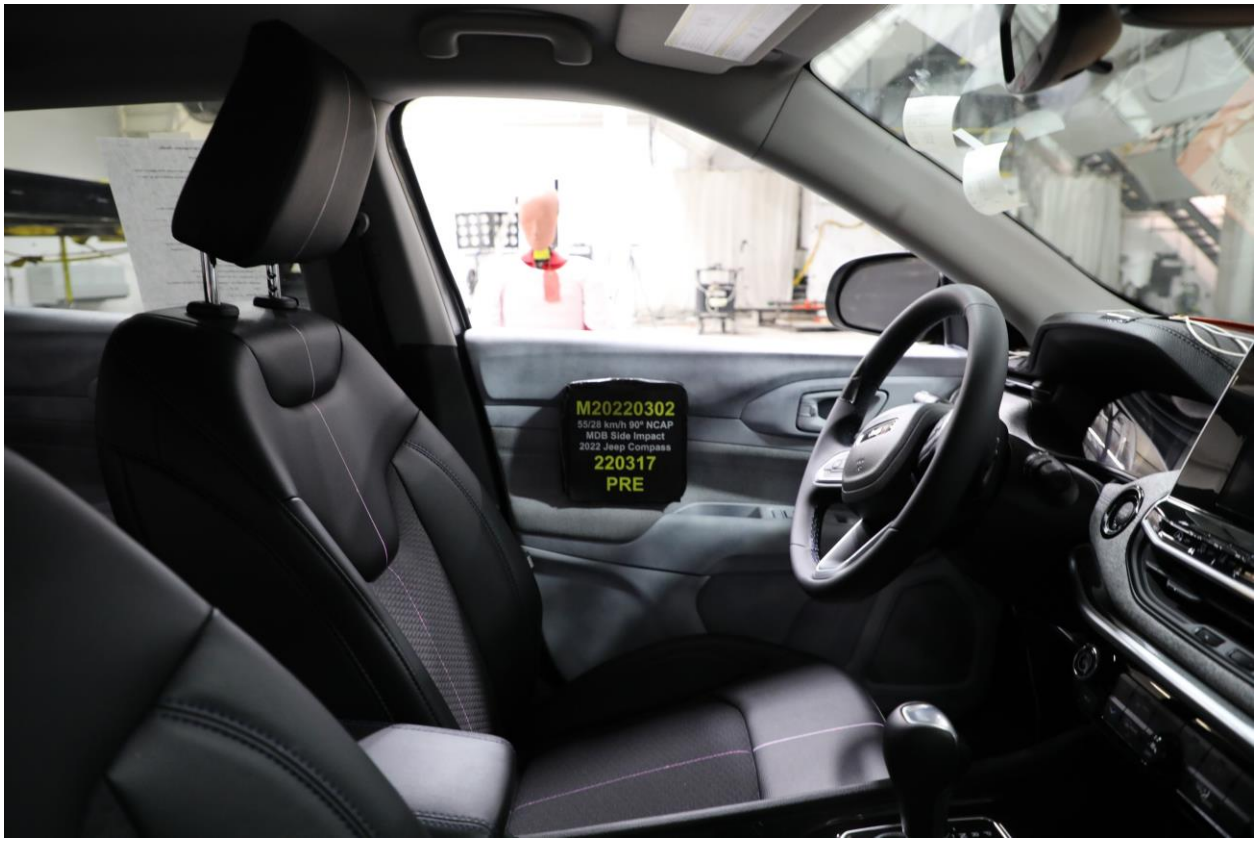
041 Pre-Test Close-Up View of Driver Seat Back or Head Restraint

042 Pre-Test Driver Dummy and Door Clearance View

043 Post-Test Driver Dummy and Door Clearance View

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

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

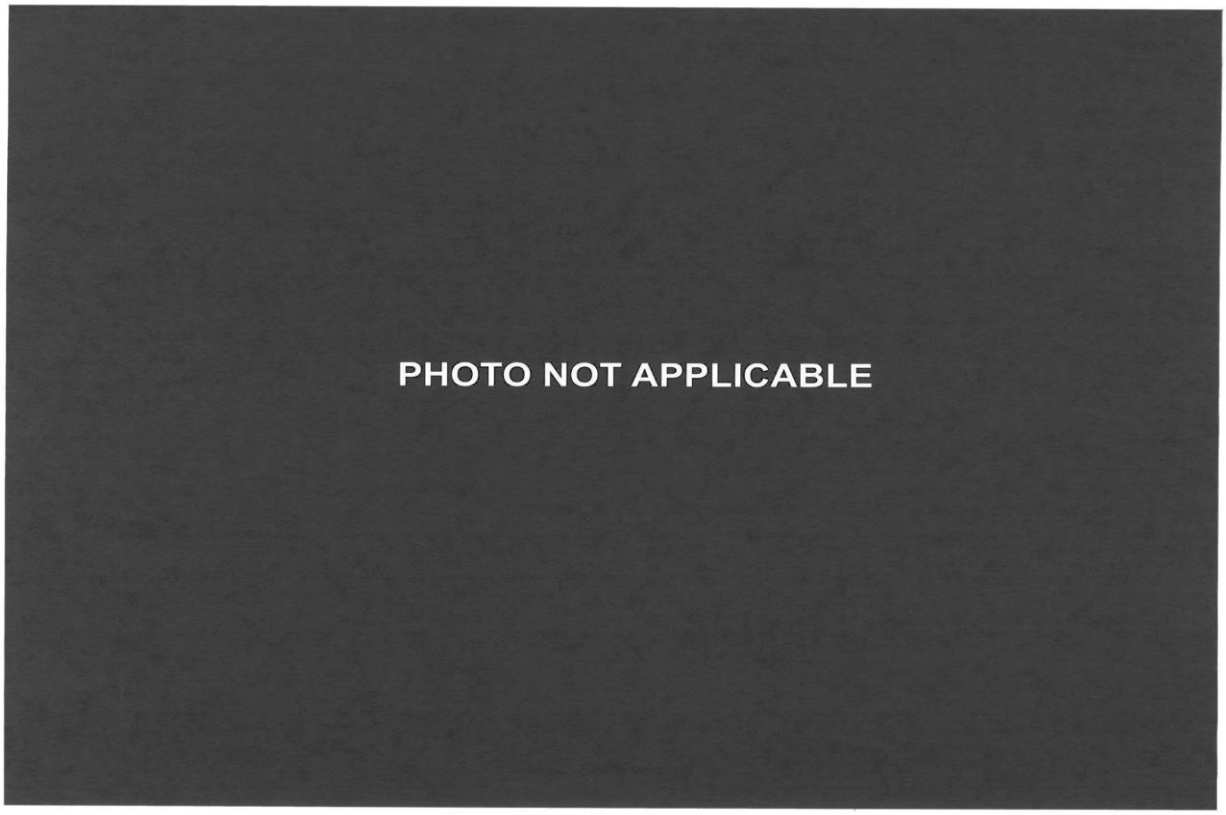


046 Pre-Test Driver Inner Door Panel View

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

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

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



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

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

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

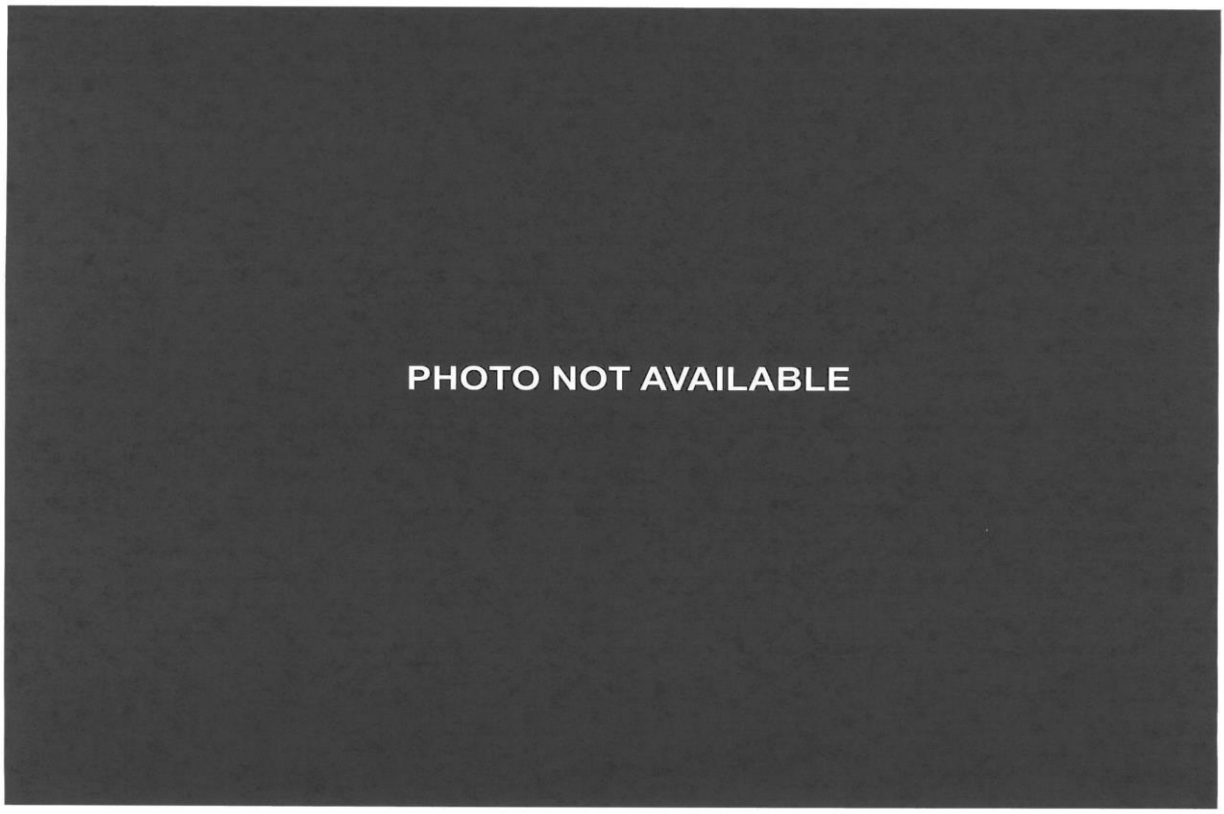
053 Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View

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

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

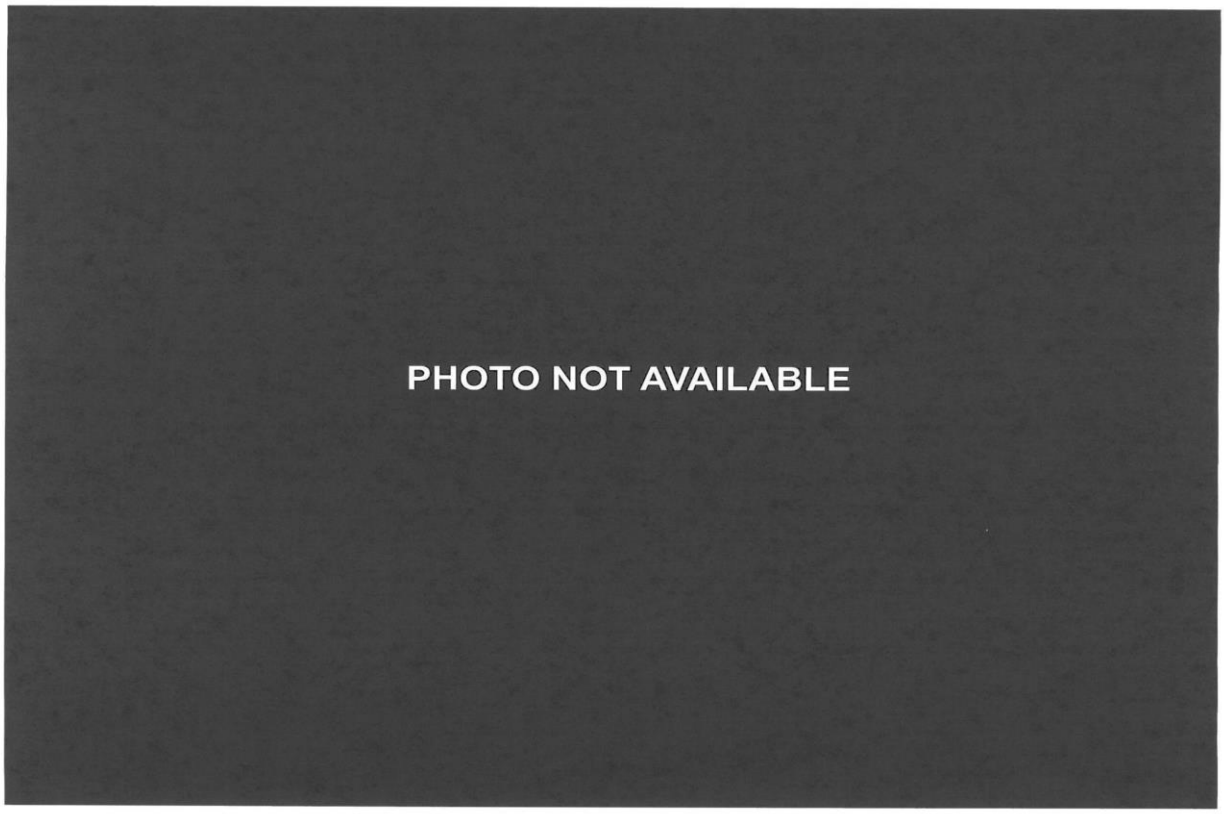
056 Pre-Test Left Side View of Passenger Dummy Shoulder and Door Top View

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



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

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



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

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

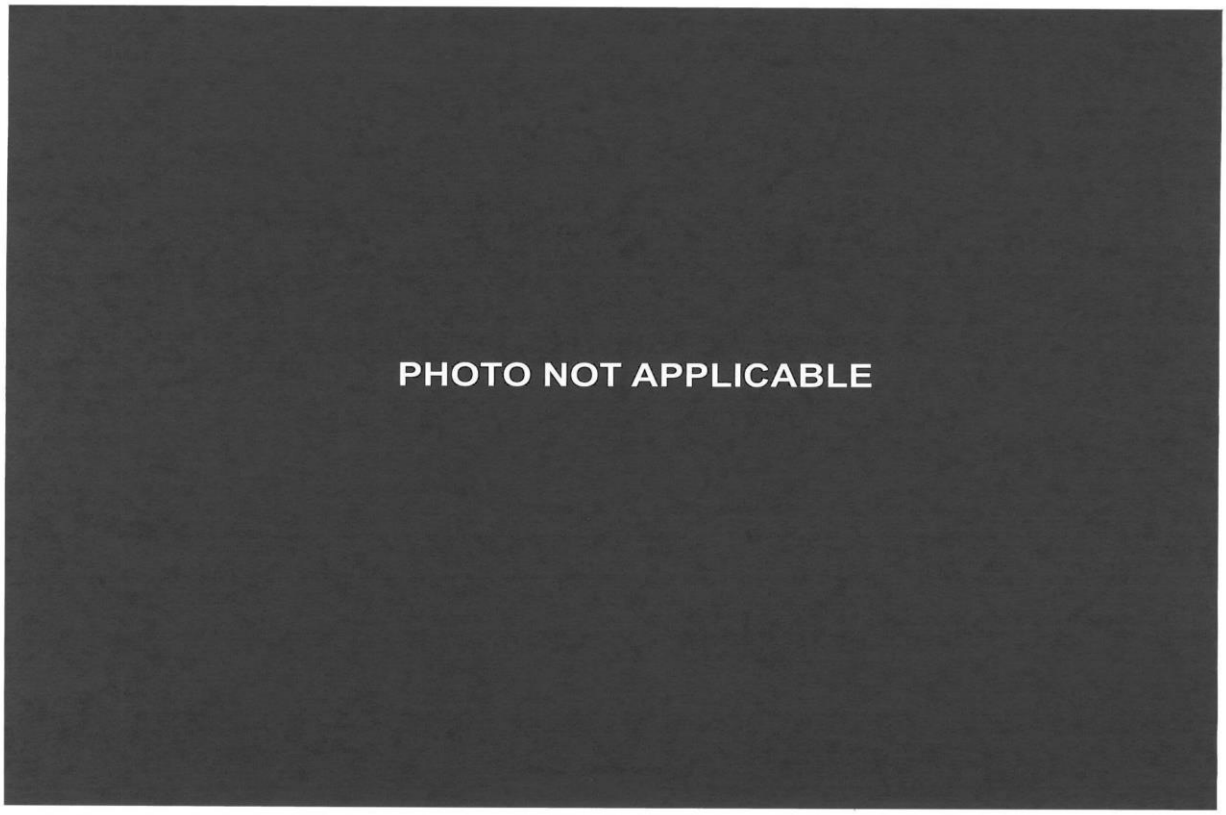
062 Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket

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

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

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

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



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

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

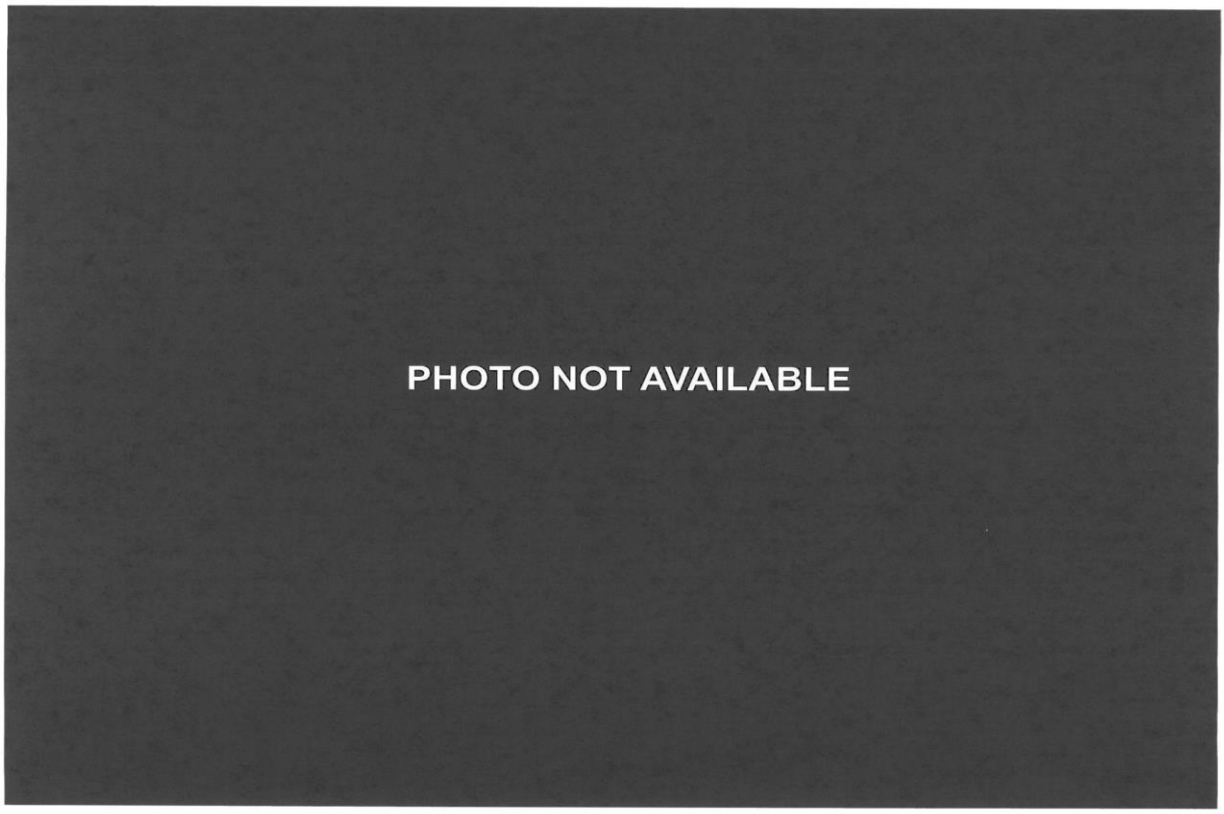
Intentionally Left Blank

069 Pre-Test Rear Passenger Dummy and Door Clearance View

070 Post-Test Rear Passenger Dummy and Door Clearance View

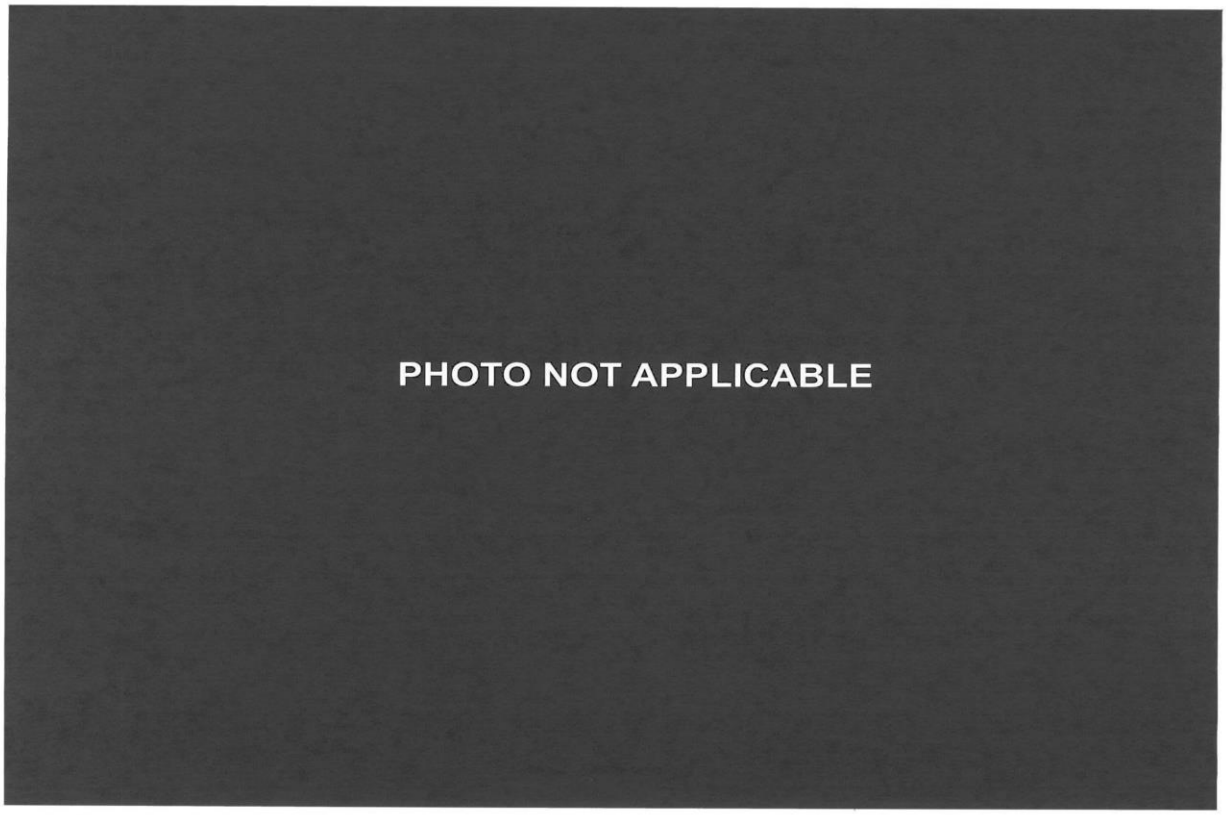
071 Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment

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



073 Pre-Test Rear Passenger Inner Door Panel View

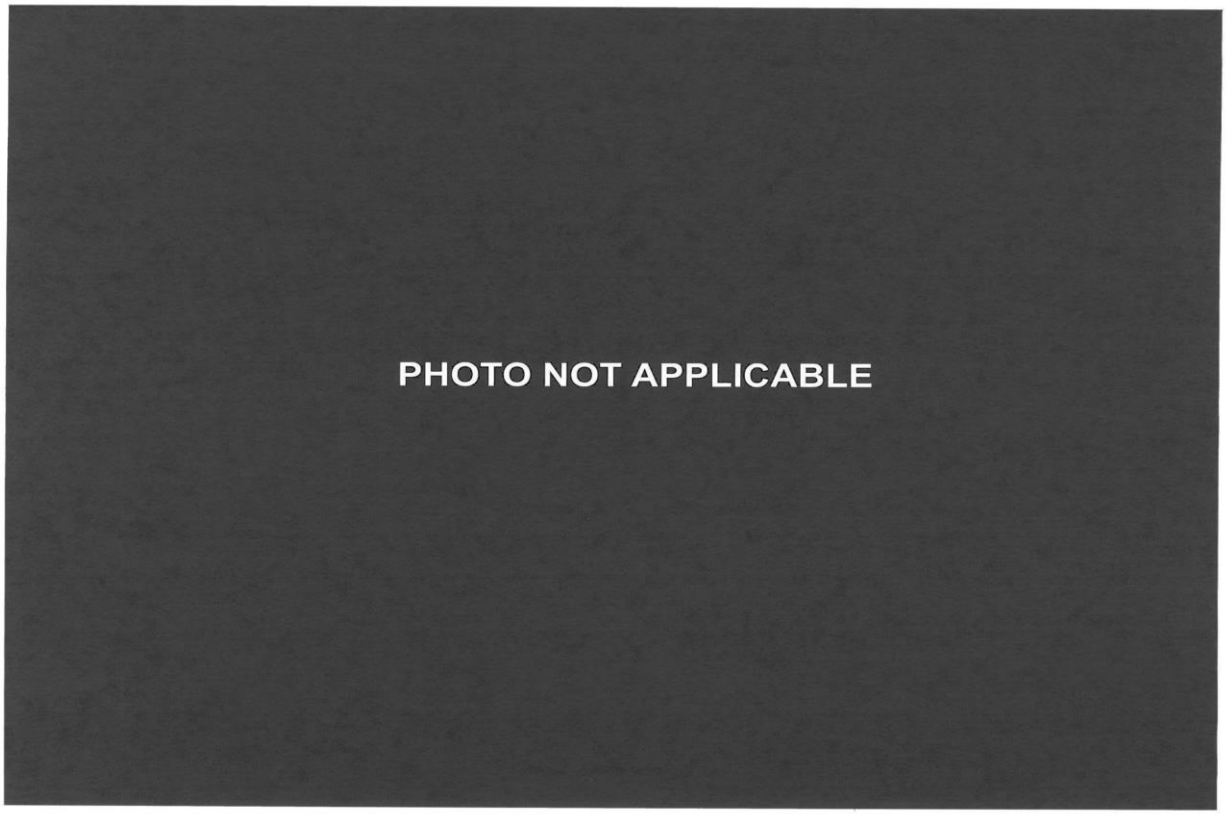
074 Post-Test Rear Passenger Inner Door Panel View



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

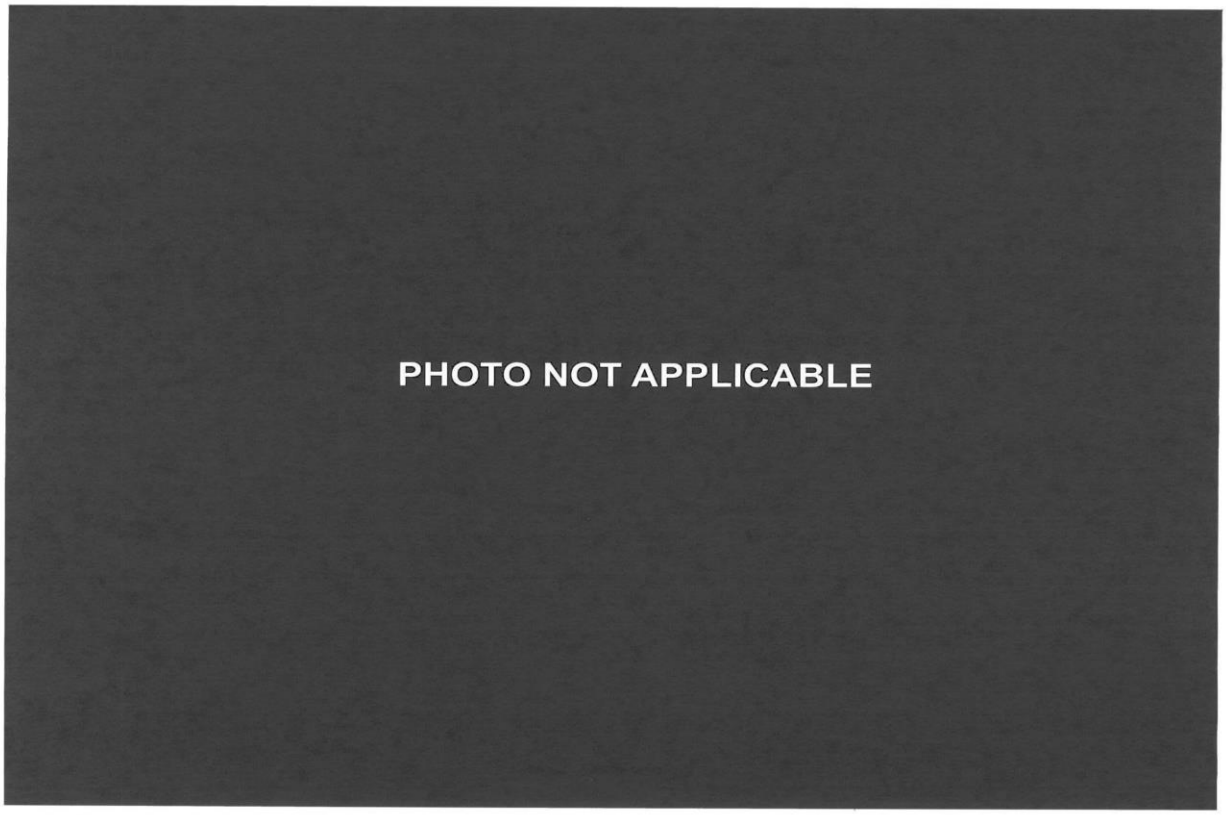
076 Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View

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



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

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



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

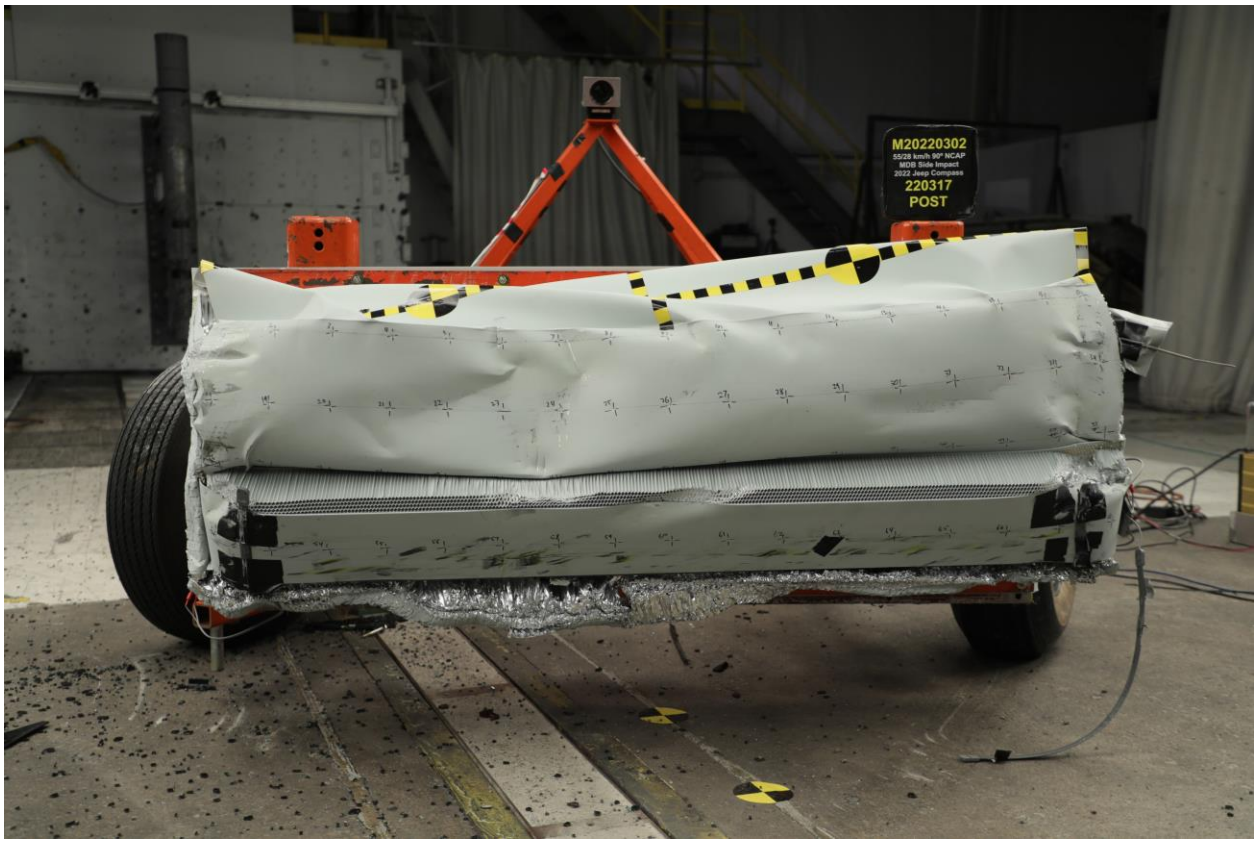
081 Post-Test Rear Passenger Dummy Close-Up Knee Contact View

Intentionally Left Blank

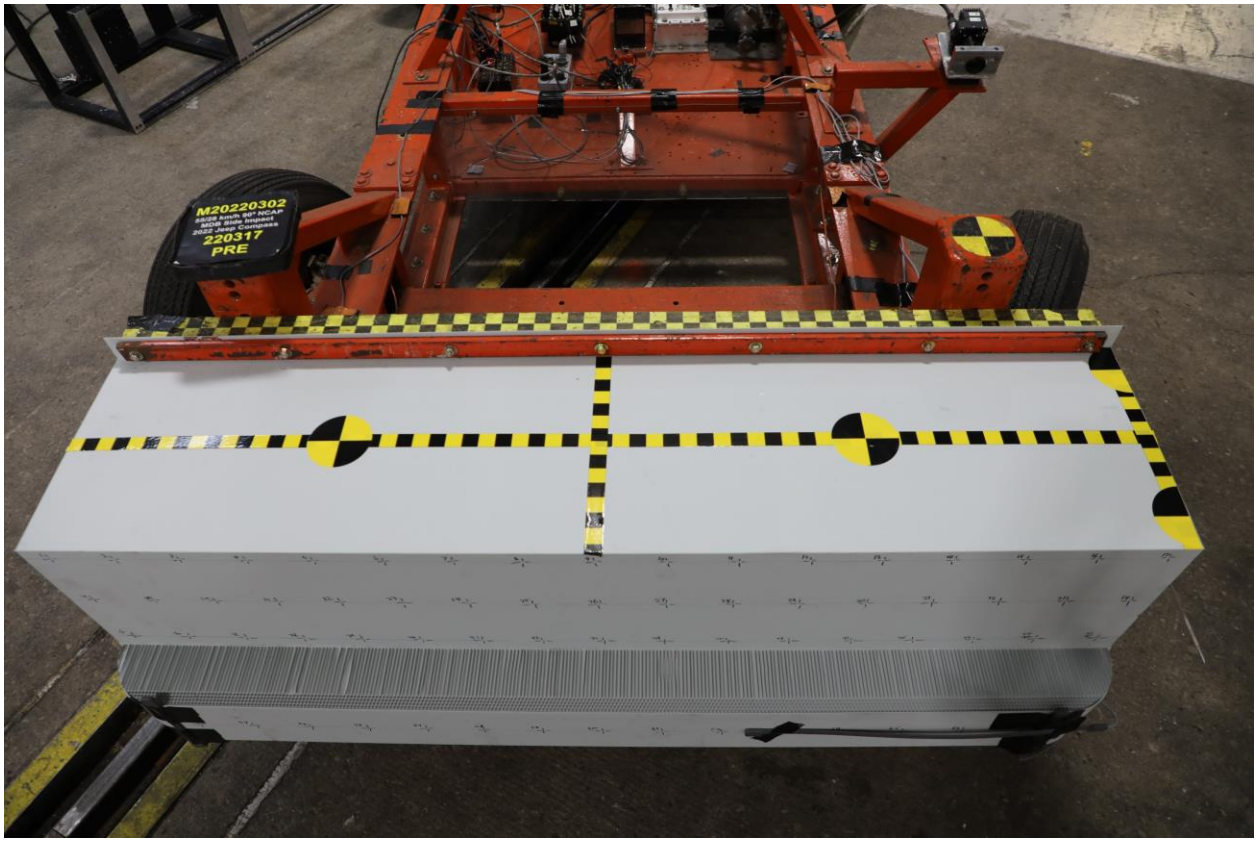
082 Pre-Test View of Fuel Filler Cap or Fuel Filler Neck

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

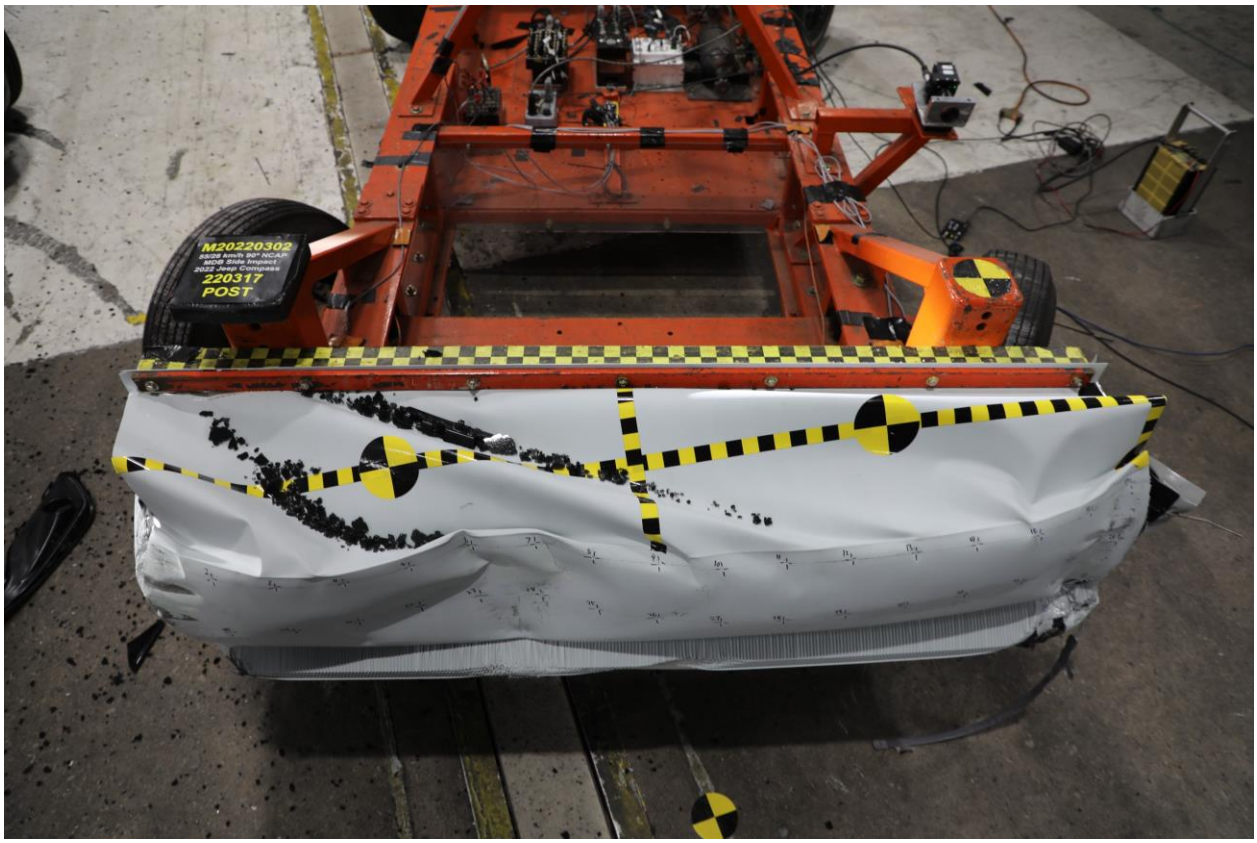
084 Pre-Test Front View of MDB Impactor Face



085 Post-Test Front View of MDB Impactor Face



086 Pre-Test Top View of MDB Impactor Face



087 Post-Test Top View of MDB Impactor Face

088 Pre-Test Left Side View of MDB Impactor Face

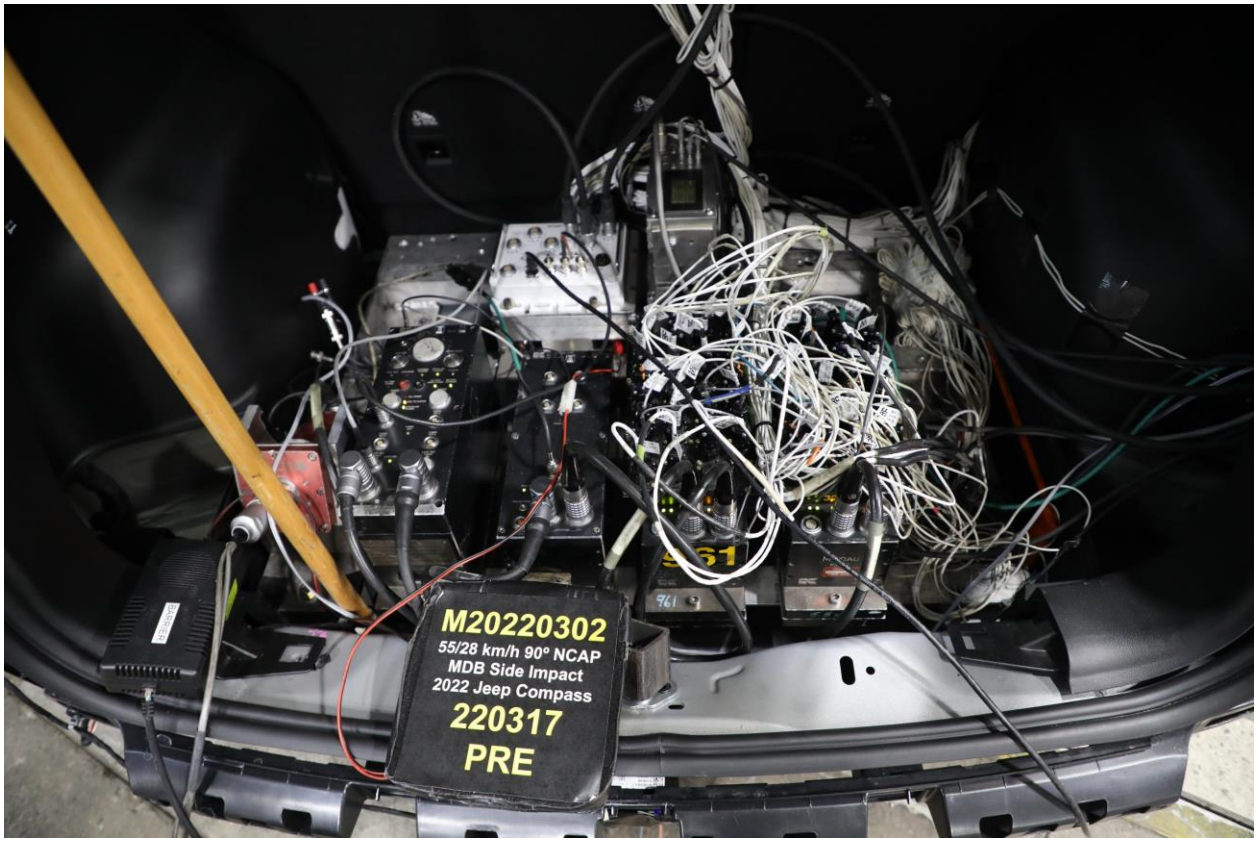
089 Post-Test Left Side View of MDB Impactor Face

090 Pre-Test Right Side View of MDB Impactor Face

091 Post-Test Right Side View of MDB Impactor Face

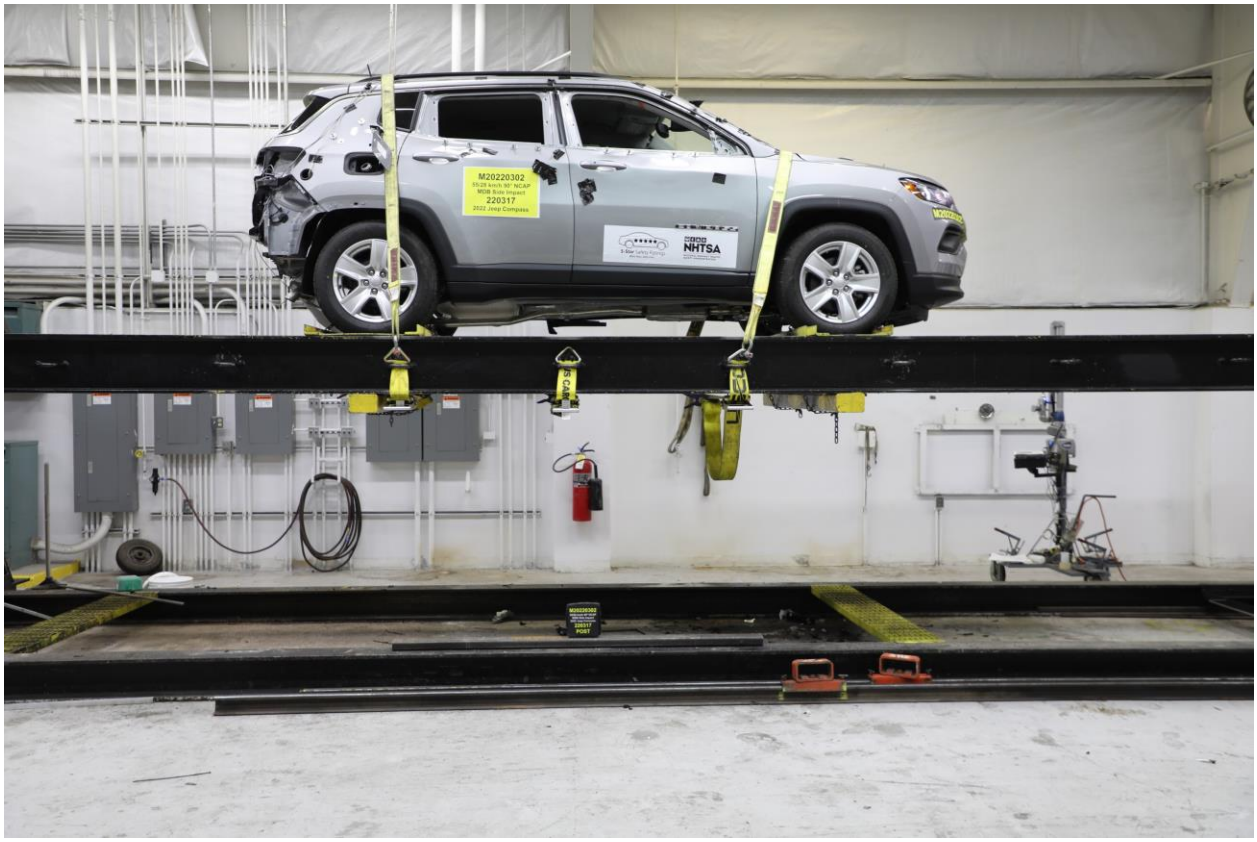
092 Close-Up View of Vehicle's Certification Label

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



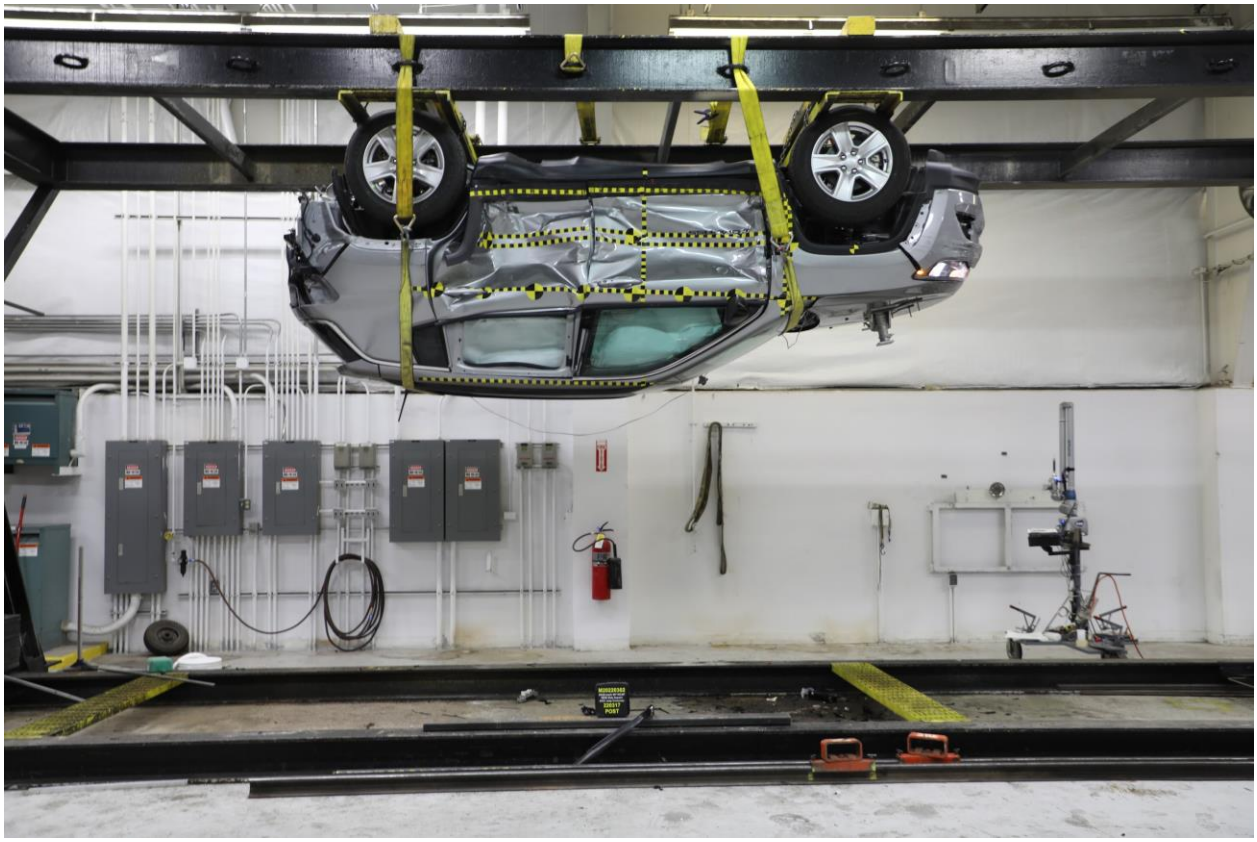
094 Pre-Test Ballast View

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

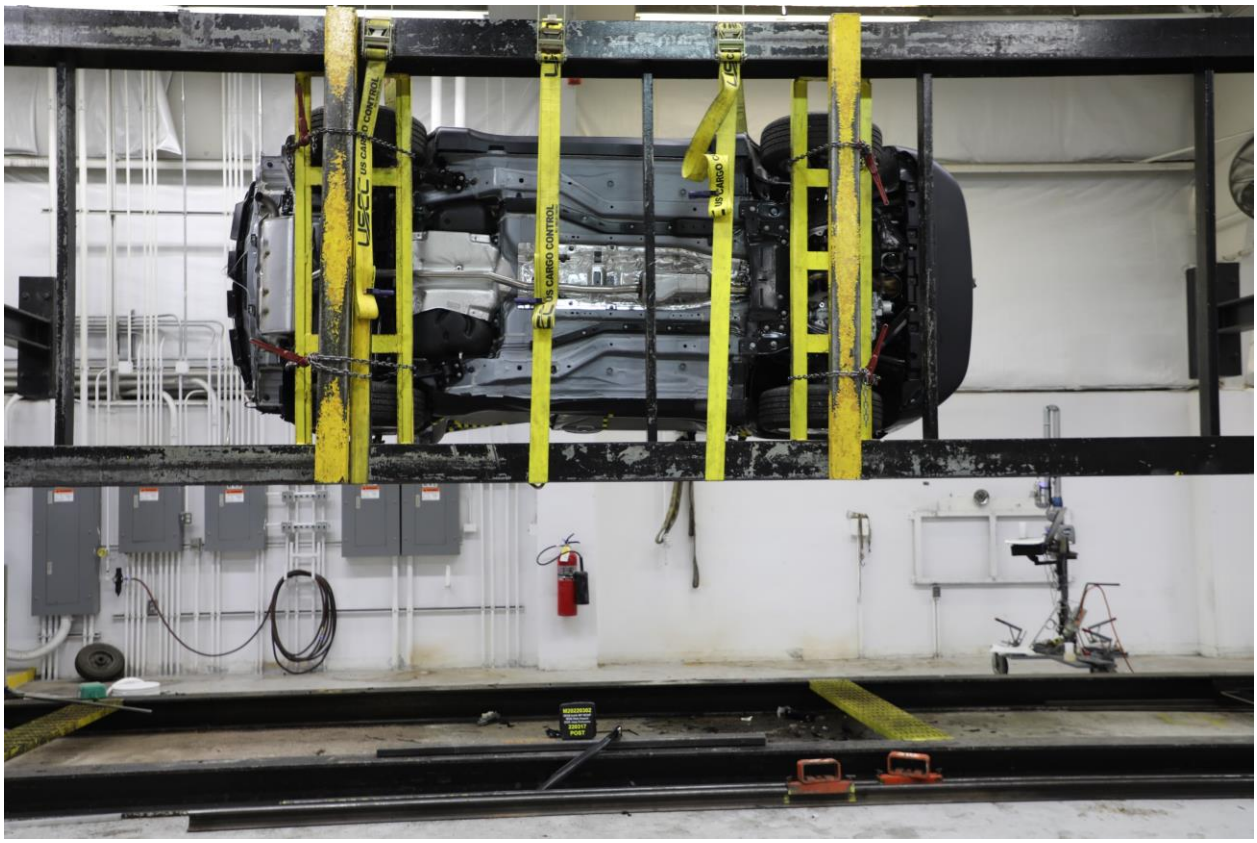


096 FMVSS No. 301 Static Rollover 0 Degrees

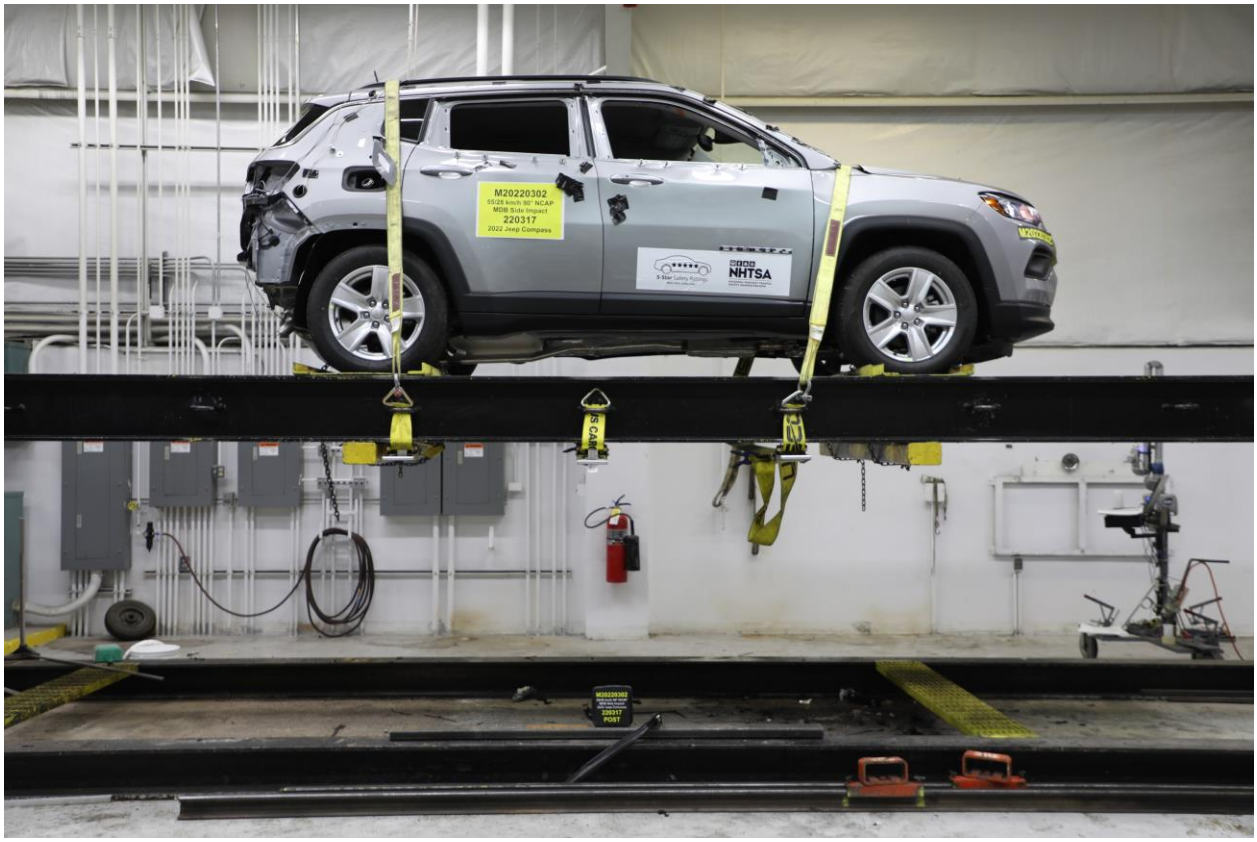
097 FMVSS No. 301 Static Rollover 90 Degrees



098 FMVSS No. 301 Static Rollover 180 Degrees

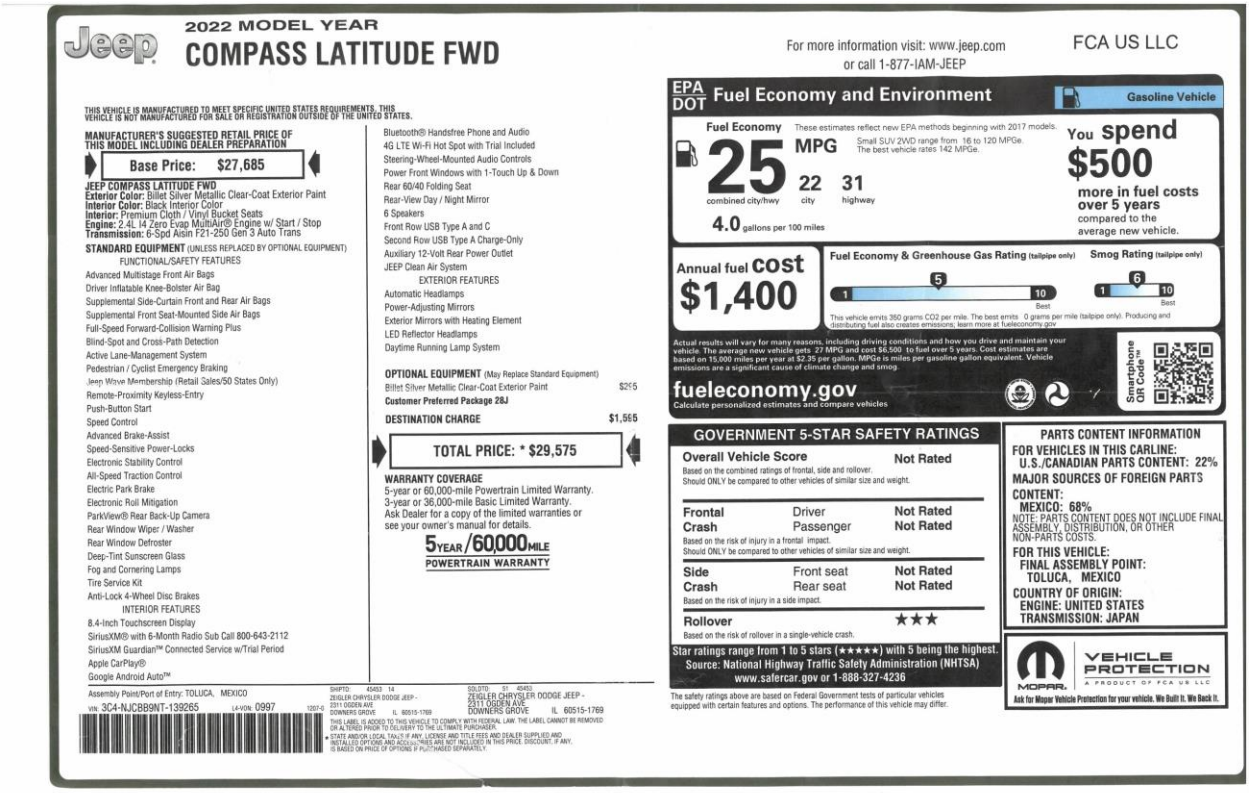


099 FMVSS No. 301 Static Rollover 270 Degrees



100 FMVSS No. 301 Static Rollover 360 Degrees

101 Impact Event



2022 MODEL YEAR
COMPASS LATITUDE FWD

For more information visit: www.jeep.com
or call 1-877-IAM-JEEP

FCA US LLC

THIS VEHICLE IS MANUFACTURED TO MEET SPECIFIC UNITED STATES REQUIREMENTS. THIS VEHICLE IS NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION

Base Price: $27,685

JEEP COMPASS LATITUDE FWD
Exterior Color: Billet Silver Metallic Clear-Coat Exterior Paint
Interior Color: Black Interior Color
Interior: Premium Cloth / Vinyl Bucket Seats
Engine: 2.4L I4 Zero Evap MultiAir® Engine w/ Start / Stop
Transmission: 6-Spd Aisin F21-250 Gen 3 Auto Trans

STANDARD EQUIPMENT (UNLESS REPLACED BY OPTIONAL EQUIPMENT)

FUNCTIONAL/SAFETY FEATURES
Advanced Multistage Front Air Bags
Driver Inflatable Knee-Bolster Air Bag
Supplemental Side-Curtain Front and Rear Air Bags
Supplemental Front Seat-Mounted Side Air Bags
Full-Speed Forward-Collision Warning Plus
Blind-Spot and Cross-Path Detection
Active Lane-Management System
Pedestrian / Cyclist Emergency Braking
Jeep Wave Membership (Retail Sales/50 States Only)
Remote-Proximity Keyless-Entry
Push-Button Start
Speed Control
Advanced Brake-Assist
Speed-Sensitive Power-Locks
Electronic Stability Control
All-Speed Traction Control
Electric Park Brake
Electronic Roll Mitigation
ParkView® Rear Back-Up Camera
Rear Window Wiper / Washer
Rear Window Defroster
Deep-Tint Sunscreen Glass
Fog and Cornering Lamps
Tire Service Kit
Anti-Lock 4-Wheel Disc Brakes

INTERIOR FEATURES
8.4-Inch Touchscreen Display
SiriusXM® with 6-Month Radio Sub Call 800-643-2112
SiriusXM Guardian™ Connected Service w/Trial Period
Apple CarPlay®
Google Android Auto™
Bluetooth® Handsfree Phone and Audio
4G LTE Wi-Fi Hot Spot with Trial Included
Steering-Wheel-Mounted Audio Controls
Power Front Windows with 1-Touch Up & Down
Rear 60/40 Folding Seat
Rear-View Day / Night Mirror
6 Speakers
Front Row USB Type A and C
Second Row USB Type A Charge-Only
Auxiliary 12-Volt Rear Power Outlet
JEEP Clean Air System

EXTERIOR FEATURES
Automatic Headlamps
Power-Adjusting Mirrors
Exterior Mirrors with Heating Element
LED Reflector Headlamps
Daytime Running Lamp System

OPTIONAL EQUIPMENT (May Replace Standard Equipment)
Billet Silver Metallic Clear-Coat Exterior Paint $265
Customer Preferred Package 28J
DESTINATION CHARGE $1,595

TOTAL PRICE: * $29,575

WARRANTY COVERAGE
5-year or 60,000-mile Powertrain Limited Warranty.
3-year or 36,000-mile Basic Limited Warranty.
Ask Dealer for a copy of the limited warranties or see your owner's manual for details.
5 YEAR / 60,000 MILE POWERTRAIN WARRANTY

Assembly Point/Port of Entry: TOLUCA, MEXICO
VIN: 3C4-NJCBB9NT-139265 LA-VIN: 0997

SHIPTO: 45453 14
ZEIGLER CHRYSLER DODGE JEEP -
2311 OGDEN AVE
DOWNERS GROVE IL 60515-1769

SOLDTO: 51 45453
ZEIGLER CHRYSLER DODGE JEEP -
2311 OGDEN AVE
DOWNERS GROVE IL 60515-1769

THIS LABEL IS AFFIXED TO THIS VEHICLE TO COMPLY WITH FEDERAL LAW. THE LABEL CANNOT BE REMOVED OR ALTERED PRIOR TO DELIVERY TO THE ULTIMATE PURCHASER.

* STATE AND/OR LOCAL TAXES IF ANY, LICENSE AND TITLE FEES AND DEALER SUPPLIED AND INSTALLED OPTIONS AND ACCESSORIES ARE NOT INCLUDED IN THIS PRICE. DISCOUNT, IF ANY, IS BASED ON PRICE OF OPTIONS IF PURCHASED SEPARATELY.

EPA DOT Fuel Economy and Environment — Gasoline Vehicle

Fuel Economy: 25 MPG combined city/hwy — 22 city — 31 highway
4.0 gallons per 100 miles
These estimates reflect new EPA methods beginning with 2017 models. Small SUV 2WD range from 16 to 120 MPGe. The best vehicle rates 142 MPGe.

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

Annual fuel cost $1,400

Fuel Economy & Greenhouse Gas Rating (tailpipe only): 5 (1 — 10, Best)
Smog Rating (tailpipe only): 6 (1 — 10, Best)
This vehicle emits 350 grams CO2 per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also creates emissions; learn more at fueleconomy.gov

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 27 MPG and cost $6,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at $2.35 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fueleconomy.gov
Calculate personalized estimates and compare vehicles

Smartphone Tag Guide

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score: Not Rated
Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.

Frontal Crash — Driver: Not Rated; Passenger: Not Rated
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.

Side Crash — Front seat: Not Rated; Rear seat: Not Rated
Based on the risk of injury in a side impact.

Rollover: ★★★
Based on the risk of rollover in a single-vehicle crash.

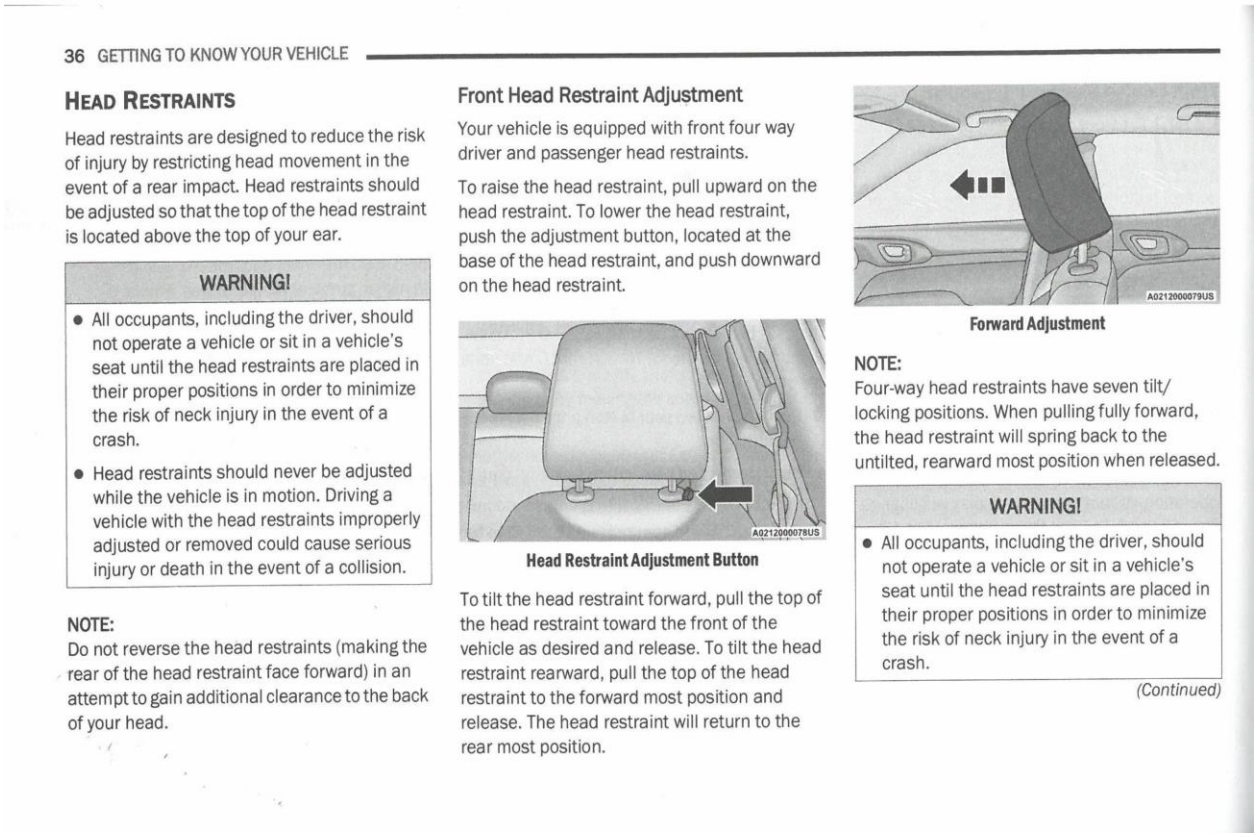
Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA)
www.safercar.gov or 1-888-327-4236

The safety ratings above are based on Federal Government tests of particular vehicles equipped with certain features and options. The performance of this vehicle may differ.

PARTS CONTENT INFORMATION
FOR VEHICLES IN THIS CARLINE:
U.S./CANADIAN PARTS CONTENT: 22%
MAJOR SOURCES OF FOREIGN PARTS CONTENT:
MEXICO: 68%
NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.
FOR THIS VEHICLE:
FINAL ASSEMBLY POINT:
TOLUCA, MEXICO
COUNTRY OF ORIGIN:
ENGINE: UNITED STATES
TRANSMISSION: JAPAN

MOPAR. VEHICLE PROTECTION
A PRODUCT OF FCA US LLC
Ask for Mopar Vehicle Protection for your vehicle. We Built It. We Back It.

102 Monroney Label



36 GETTING TO KNOW YOUR VEHICLE

HEAD RESTRAINTS

Head restraints are designed to reduce the risk of injury by restricting head movement in the event of a rear impact. Head restraints should be adjusted so that the top of the head restraint is located above the top of your ear.

WARNING!

- All occupants, including the driver, should not operate a vehicle or sit in a vehicle's seat until the head restraints are placed in their proper positions in order to minimize the risk of neck injury in the event of a crash.
- Head restraints should never be adjusted while the vehicle is in motion. Driving a vehicle with the head restraints improperly adjusted or removed could cause serious injury or death in the event of a collision.

NOTE:
Do not reverse the head restraints (making the rear of the head restraint face forward) in an attempt to gain additional clearance to the back of your head.

Front Head Restraint Adjustment

Your vehicle is equipped with front four way driver and passenger head restraints.

To raise the head restraint, pull upward on the head restraint. To lower the head restraint, push the adjustment button, located at the base of the head restraint, and push downward on the head restraint.

Head Restraint Adjustment Button

To tilt the head restraint forward, pull the top of the head restraint toward the front of the vehicle as desired and release. To tilt the head restraint rearward, pull the top of the head restraint to the forward most position and release. The head restraint will return to the rear most position.

Forward Adjustment

NOTE:
Four-way head restraints have seven tilt/locking positions. When pulling fully forward, the head restraint will spring back to the untilted, rearward most position when released.

WARNING!

- All occupants, including the driver, should not operate a vehicle or sit in a vehicle's seat until the head restraints are placed in their proper positions in order to minimize the risk of neck injury in the event of a crash.

(Continued)

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

WARNING!

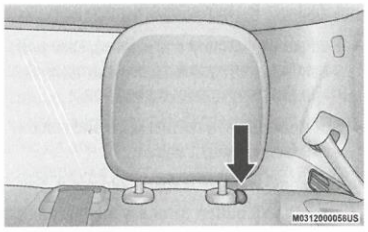
- Head restraints should never be adjusted while the vehicle is in motion. Driving a vehicle with the head restraints improperly adjusted or removed could cause serious injury or death in the event of a collision.

NOTE:
The head restraints should only be removed by qualified technicians, for service purposes only. If either of the head restraints require removal, see an authorized dealer.

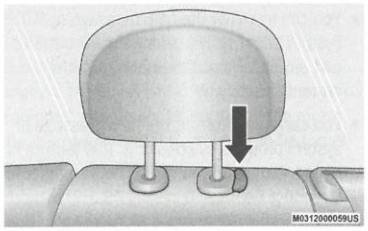
Rear Head Restraints

The rear head restraints have two positions: up or down. When the center seat is being occupied, the head restraint should be in the raised position. When there is no occupant in the center seat, the head restraint can be lowered for maximum visibility for the driver.

To raise the head restraint, pull upward on the head restraint. To lower the head restraint, push the adjustment button, located at the base of the head restraint, and push downward on the head restraint.



Outboard Head Restraint Adjustment Button



Center Head Restraint Adjustment Button

NOTE:
The head restraints should only be removed by qualified technicians, for service purposes only. If either of the head restraints require removal, see an authorized dealer.

WARNING!

ALL the head restraints MUST be reinstalled in the vehicle to properly protect the occupants.

UCONNECT VOICE RECOGNITION QUICK TIPS — IF EQUIPPED

Introducing Voice Recognition

Start using Uconnect Voice Recognition with these helpful quick tips. It provides the key Voice Commands and tips you need to know to control your vehicle's Voice Recognition (VR) system.

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

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Driver & Passenger Dummy Instrumentation Plots

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

Additional Driver & Passenger Dummy Instrumentation Data

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

Vehicle Instrumentation Data

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

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)
MDB Center of Gravity Acceleration (Y)
MDB Center of Gravity Acceleration (Z)
MDB Rear Acceleration (X)
MDB Rear Acceleration (Y)
Left MDB Contact Switch
Right MDB Contact Switch

NHTSA

Test Date: 03/17/2022

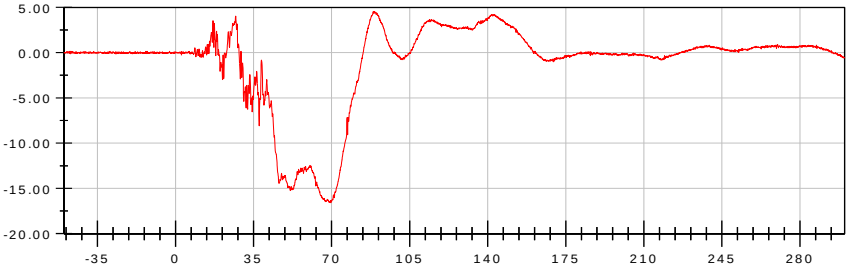
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

Driver Head Acceleration (X) Primary (g) vs. Time [ms]



<Max>

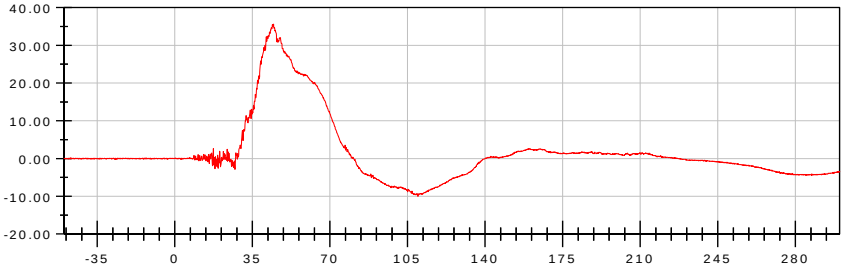
4.52 g at 88.64 ms

<Min>

-16.58 g at 69.60 ms

CFC_1000

Driver Head Acceleration (Y) Primary (g) vs. Time [ms]



<Max>

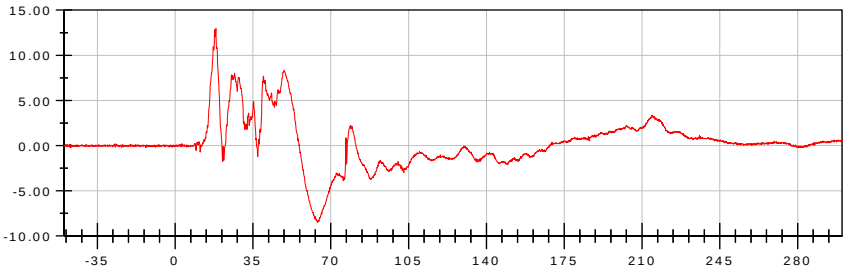
35.63 g at 44.48 ms

<Min>

-10.04 g at 109.76 ms

CFC_1000

Driver Head Acceleration (Z) Primary (g) vs. Time [ms]



<Max>

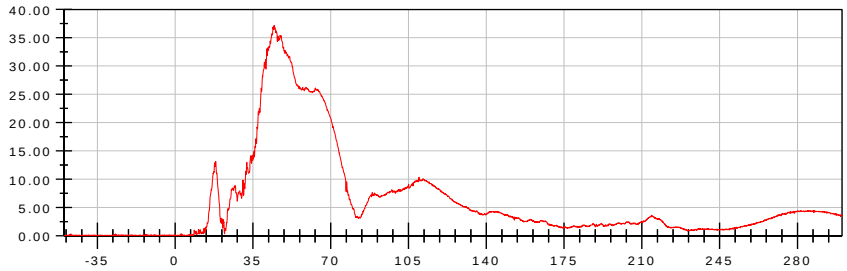
12.96 g at 18.32 ms

<Min>

-8.52 g at 64.00 ms

CFC_1000

Driver Head Resultant Acceleration Primary (g) vs. Time [ms]



<Max>

37.18 g at 44.56 ms

<Min>

0.05 g at -49.92 ms

CFC_1000

NHTSA

Test Date: 03/17/2022

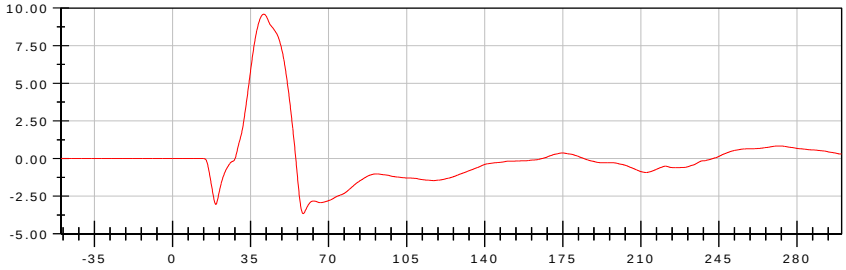
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

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



<Max>

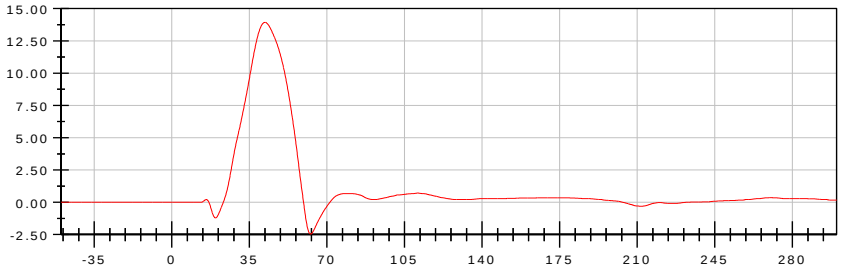
9.59 mm at 40.96 ms

<Min>

-3.66 mm at 58.56 ms

CFC_180

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



<Max>

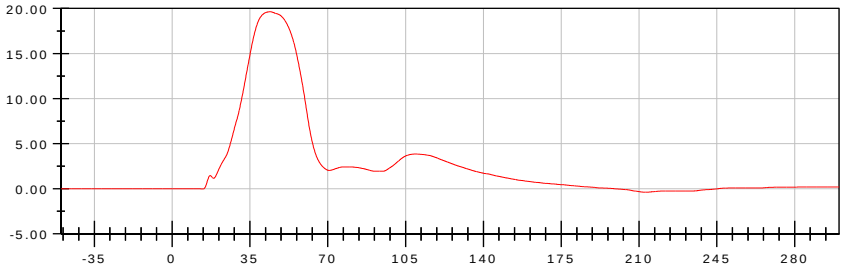
13.94 mm at 42.00 ms

<Min>

-2.46 mm at 62.64 ms

CFC_180

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



<Max>

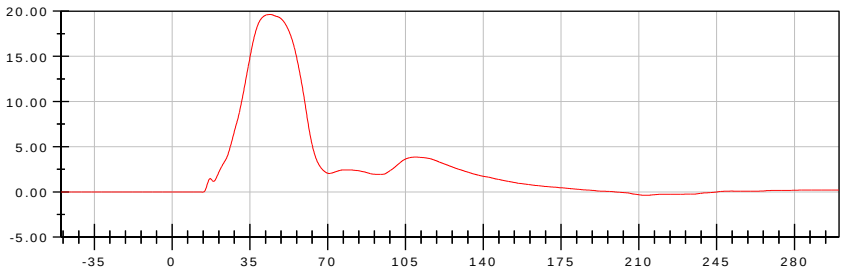
19.63 mm at 44.08 ms

<Min>

-0.38 mm at 212.88 ms

CFC_180

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



<Max>

19.63 mm at 44.08 ms

<Min>

-0.38 mm at 212.88 ms

CFC_180

NHTSA

Test Date: 03/17/2022

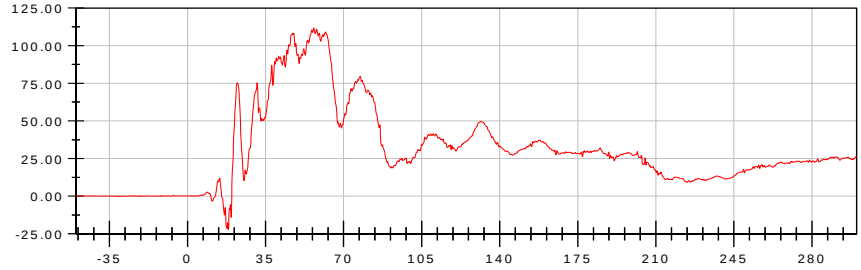
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

Driver Anterior Abdominal Force (Y) (N) vs. Time [ms]



<Max>

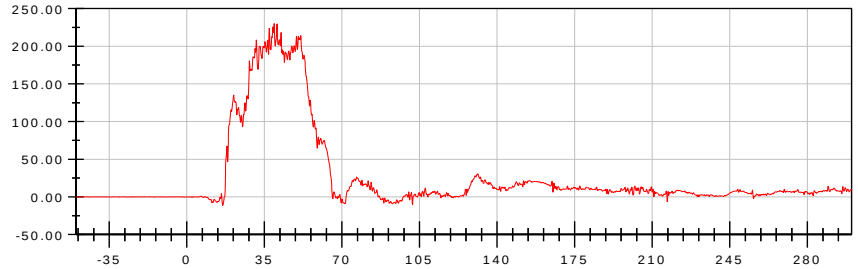
111.71 N at 56.56 ms

<Min>

-22.26 N at 18.32 ms

CFC_600

Driver Middle Abdominal Force (Y) (N) vs. Time [ms]



<Max>

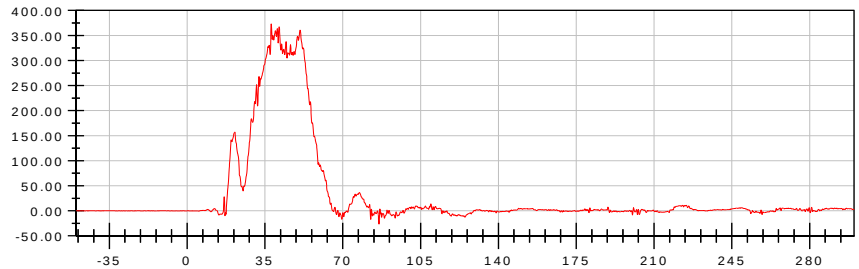
230.19 N at 39.36 ms

<Min>

-11.48 N at 16.24 ms

CFC_600

Driver Posterior Abdominal Force (Y) (N) vs. Time [ms]



<Max>

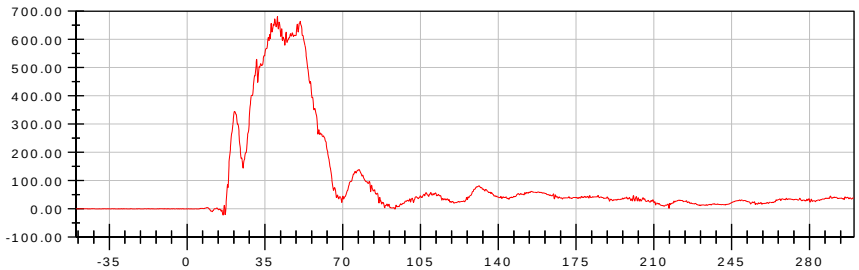
372.96 N at 37.84 ms

<Min>

-26.67 N at 86.32 ms

CFC_600

Driver Total Abdmoninal Force (Y) (N) vs. Time [ms]



<Max>

681.34 N at 40.64 ms

<Min>

-22.11 N at 16.16 ms

CFC_600

NHTSA

Test Date: 03/17/2022

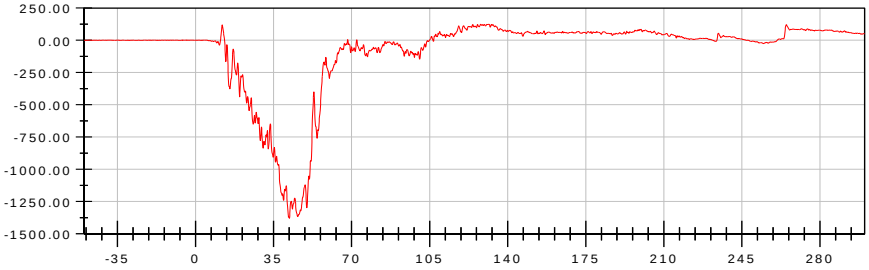
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

Driver Pubic Symphysis Force (Y) (N) vs. Time [ms]



<Max>

123.95 N at 127.84 ms

<Min>

-1,378.77 N at 42.08 ms

CFC_600

NHTSA

Test Date: 03/17/2022

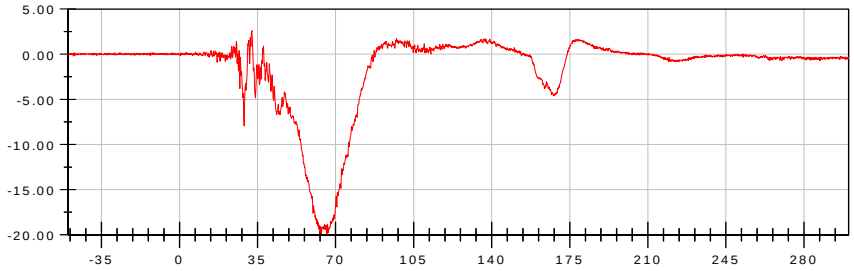
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

Passenger Head Acceleration (X) Primary (g) vs. Time [ms]



<Max>

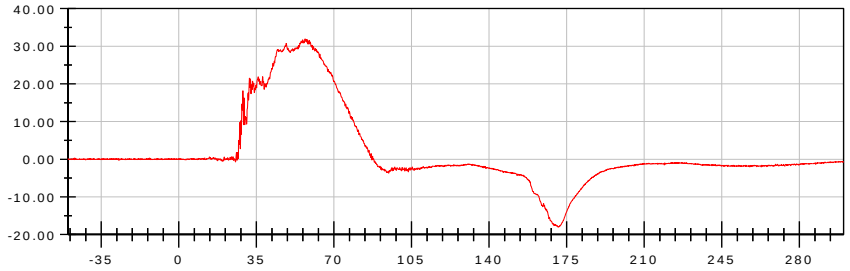
2.61 g at 32.48 ms

<Min>

-19.94 g at 66.08 ms

CFC_1000

Passenger Head Acceleration (Y) Primary (g) vs. Time [ms]



<Max>

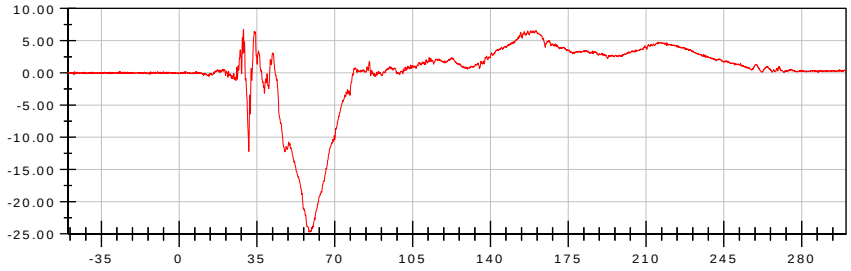
31.96 g at 56.96 ms

<Min>

-18.02 g at 171.20 ms

CFC_1000

Passenger Head Acceleration (Z) Primary (g) vs. Time [ms]



<Max>

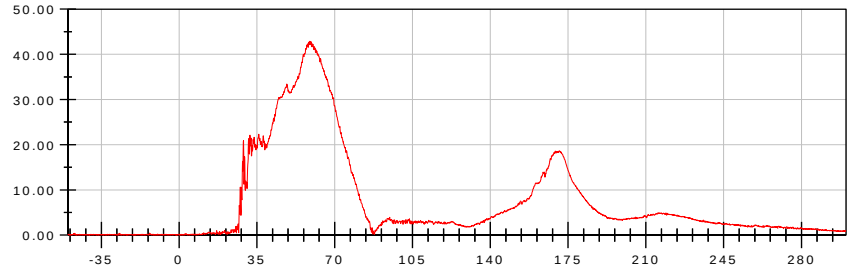
6.75 g at 28.96 ms

<Min>

-24.72 g at 58.40 ms

CFC_1000

Passenger Head Resultant Acceleration Primary (g) vs. Time [ms]



<Max>

42.90 g at 58.80 ms

<Min>

0.04 g at -49.12 ms

CFC_1000

NHTSA

Test Date: 03/17/2022

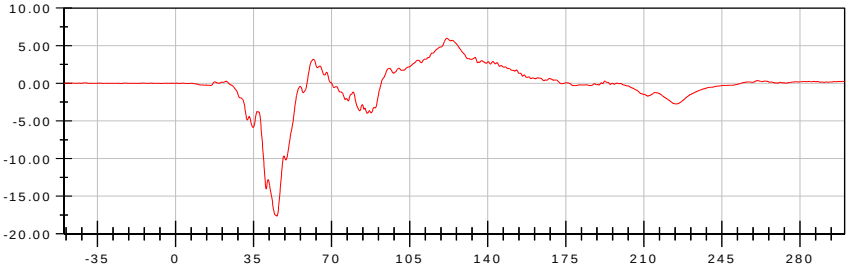
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

Passenger Lower Spine T12 Acceleration (X) (g) vs. Time [ms]



<Max>

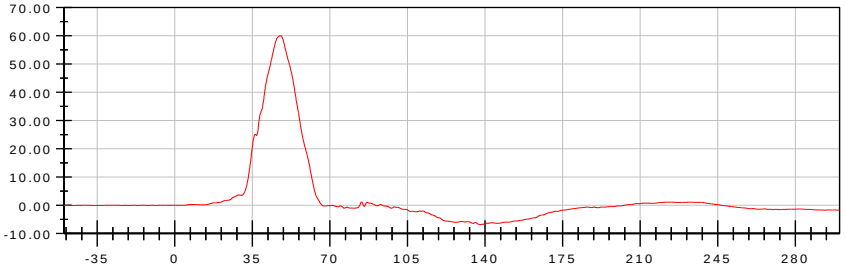
5.98 g at 121.68 ms

<Min>

-17.64 g at 45.44 ms

CFC_180

Passenger Lower Spine T12 Acceleration (Y) (g) vs. Time [ms]



<Max>

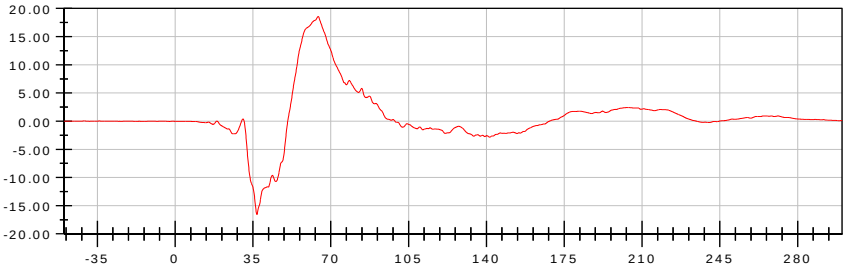
60.08 g at 47.68 ms

<Min>

-6.86 g at 137.68 ms

CFC_180

Passenger Lower Spine T12 Acceleration (Z) (g) vs. Time [ms]



<Max>

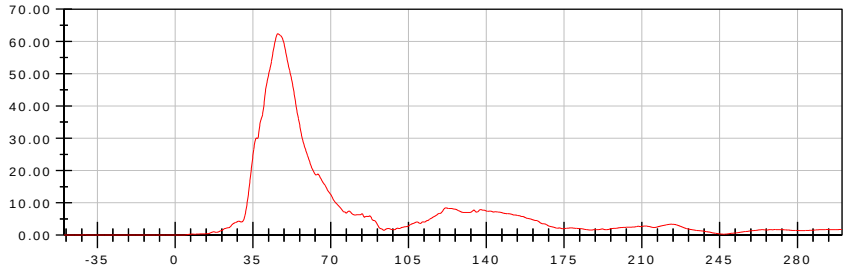
18.57 g at 64.32 ms

<Min>

-16.57 g at 36.80 ms

CFC_180

Passenger Lower Spine T12 Resultant Acceleration (g) vs. Time [ms]



<Max>

62.34 g at 46.24 ms

<Min>

0.00 g at -42.40 ms

CFC_180

NHTSA

Test Date: 03/17/2022

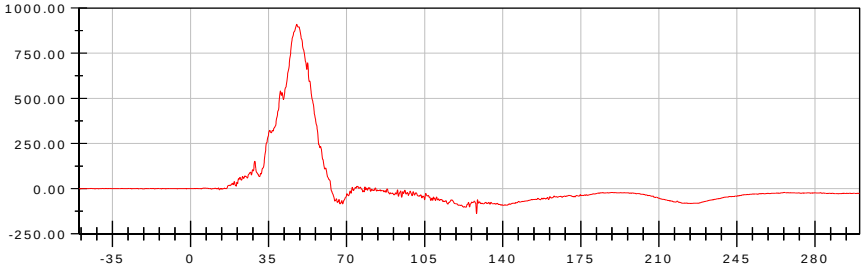
Position #1 ES-2 Dummy with Rib Extension (F030)

Position #4 SID IIs Dummy (DQ0570)

Test Lab: CTF

Test Number: 220317 (M20220302)

Passenger Iliac Force on Impact Side (Y) (N) vs. Time [ms]



<Max>

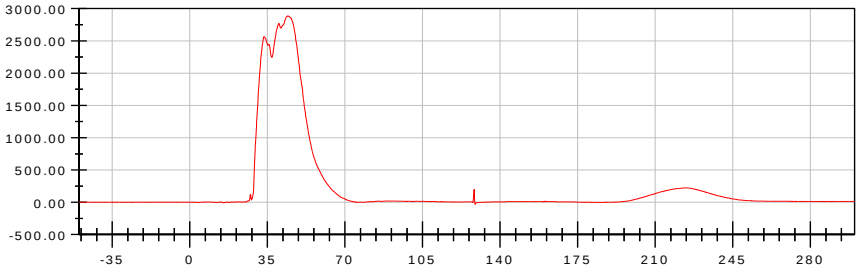
909.64 N at 47.60 ms

<Min>

-137.28 N at 128.32 ms

CFC_600

Passenger Acetabulum Force on Impact Side (Y) (N) vs. Time [ms]



<Max>

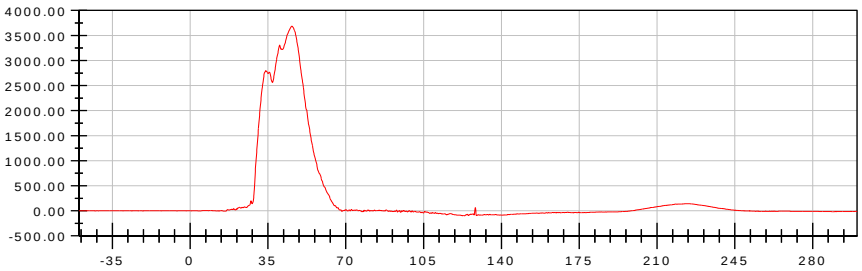
2,884.86 N at 44.24 ms

<Min>

-31.98 N at 128.72 ms

CFC_600

Passenger Total Pelvic Force on Impact Side (Y) (N) vs. Time [ms]



<Max>

3,685.73 N at 45.76 ms

<Min>

-98.09 N at 122.40 ms

CFC_600

APPENDIX C
DUMMY PERFORMANCE CALIBRATION TEST DATA

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS

ES-2re (Driver) Dummy

Description

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS

SID-IIs (Rear Passenger) Dummy

Description

Table 1. External Measurements
Table 2. Head Drop Test
- Head (X) Acceleration (G's) vs. Time (ms)
- Head (Y) Acceleration (G's) vs. Time (ms)
- Head (Z) Acceleration (G's) vs. Time (ms)
- Resultant Head Acceleration (G's) vs. Time (ms)

Table 3. Lateral Neck Pendulum Test
- Pendulum Velocity (m/s) vs. Time (ms)
- Flexion Angle (°) vs. Time (ms)
- Moment About Occipital Condyle (Nm) vs. Time (ms)

Table 4. Shoulder Impact Test
- Impactor Acceleration (G's) vs. Time (ms)
- Shoulder Displacement (mm) vs. Time (ms)
- Upper Spine Acceleration (G's) vs. Time (ms)

Table 5. Thorax (With Arm) Impact Test
- Impactor Acceleration (G's) vs. Time (ms)
- Shoulder Displacement (mm) vs. Time (ms)
- Upper Rib Displacement (mm) vs. Time (ms)
- Middle Rib Displacement (mm) vs. Time (ms)
- Lower Rib Displacement (mm) vs. Time (ms)
- Upper Spine Acceleration (G's) vs. Time (ms)
- Lower Spine Acceleration (G's) vs. Time (ms)

Table 6. Thorax (Without Arm) Impact Test
- Impactor Acceleration (G's) vs. Time (ms)
- Upper Rib Displacement (mm) vs. Time (ms)
- Middle Rib Displacement (mm) vs. Time (ms)
- Lower Rib Displacement (mm) vs. Time (ms)
- Upper Spine Acceleration (G's) vs. Time (ms)
- Lower Spine Acceleration (G's) vs. Time (ms)

Table 7. Abdomen Impact Test
- Impactor Acceleration (G's) vs. Time (ms)
- Upper Abdominal Rib Displacement (mm) vs. Time (ms)
- Lower Abdominal Rib Displacement (mm) vs. Time (ms)
- Lower Spine Acceleration (G's) vs. Time (ms)

Table 8. Pelvis Plug Quasi-Static Test (Optional*)
Table 9. Pelvis Acetabulum Impact Test
- Impactor Acceleration (G's) vs. Time (ms)
- Pelvis (Y) Acceleration (G's) vs. Time (ms)
- Acetabulum Force (N) vs. Time (ms)

Table 10. Pelvis Iliac Impact Test
- Impactor Acceleration (G's) vs. Time (ms)
- Pelvis (Y) Acceleration (G's) vs. Time (ms)
- Iliac Force (N) vs. Time (ms)

Pre-Test Calibration Sheets
Driver S/N F030

Transportation Research Center Inc.
572U ES-2re Dummy
External Dimensions
Serial No. F030 Calibration No. 77

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

Baseline 10/07/05

Transportation Research Center Inc.

Left Lateral Head Drop
ES-2re Serial No. F030 Certification No. 77-2
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Peak Resultant Acceleration	125 - 155 g	137.6 g	Yes
Peak Longitudinal Acceleration	(-15) - 15 g	8.2 g	Yes
Is Resultant Acceleration Curve Unimodal within 15% of Main Pulse?	< 15 %	4.11 %	Yes

Test meets specifications.

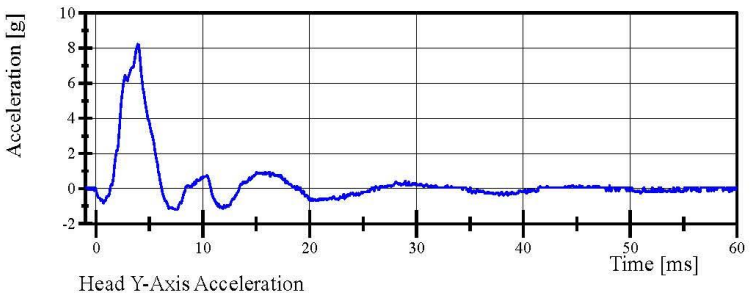
Condition: Used

Comments:
Head Skin S/N: DP6812

Transportation Research Center Inc.

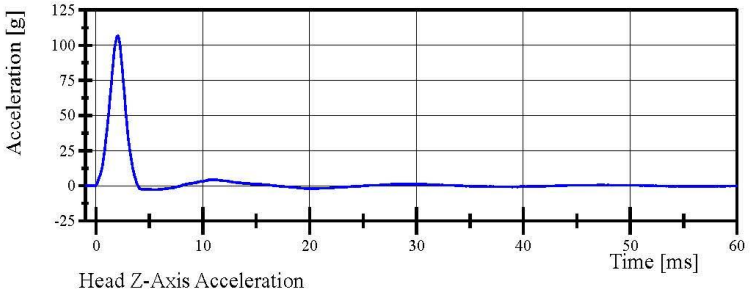
Left Lateral Head Drop
ES-2re Serial No. F030 Certification No. 77-2
Test Date: 3/1/2022

Head X-Axis Acceleration



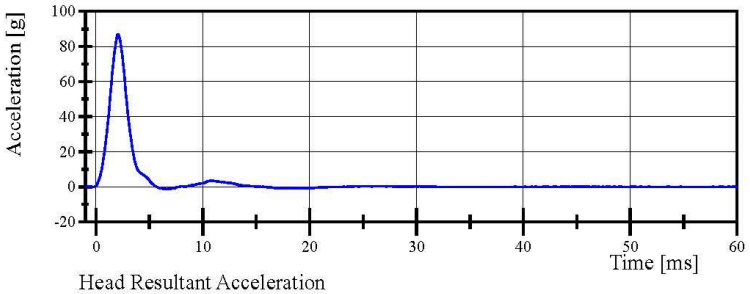
Filter Class: CFC_1000
Max: 8.2 g at 3.9 ms
Min: -1.2 g at 7.4 ms

Head Y-Axis Acceleration



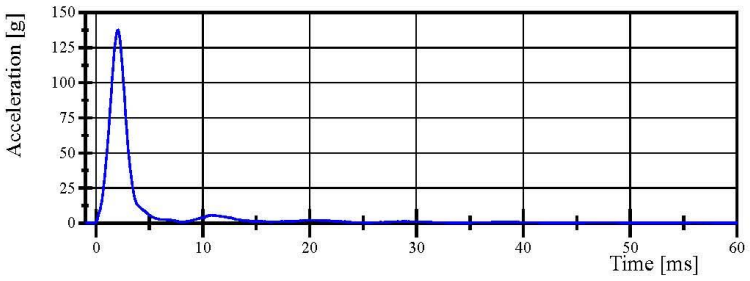
Filter Class: CFC_1000
Max: 106.6 g at 2.1 ms
Min: -2.9 g at 5.5 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 86.9 g at 2.1 ms
Min: -1.3 g at 6.6 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 137.6 g at 2.1 ms
Min: 0.1 g at -0.6 ms

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

03.01.2022 14:18:13 363

Transportation Research Center Inc.

Left Lateral Neck
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.36 m/s	Yes
Maximum Headform Flexion			
Peak	(-49) - (-59) deg	-50.7 deg	Yes
Time of Peak	54 - 66 ms	55.8 ms	Yes
Headform Flexion Decay - Peak to Zero	53 - 88 ms	55.4 ms	Yes

Test meets specifications.

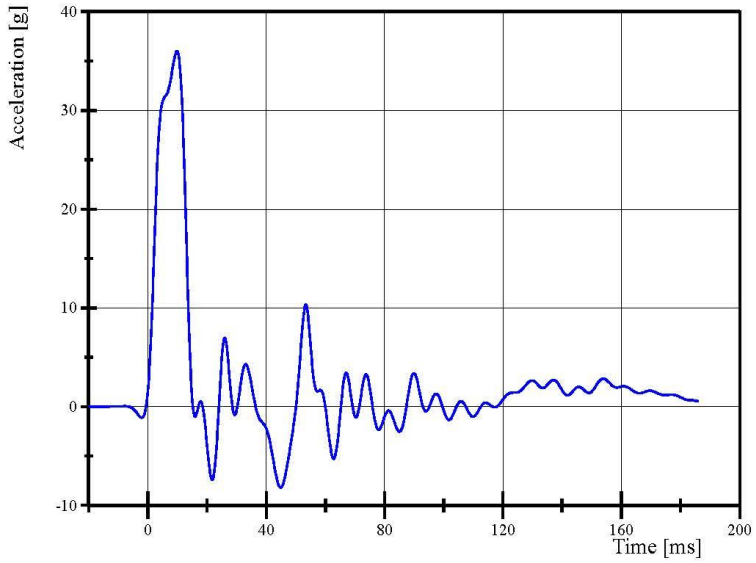
Condition: Used

Comments:
Neck S/N: 05053

Transportation Research Center Inc.

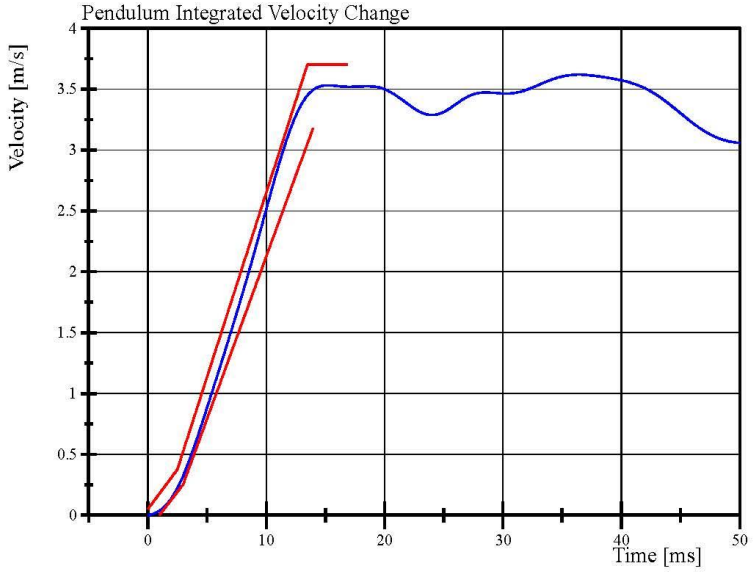
Left Lateral Neck
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Pendulum Acceleration



Filter Class: CFC_60
Max: 36.0 g at 9.8 ms
Min: -8.2 g at 44.9 ms

Pendulum Integrated Velocity Change



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

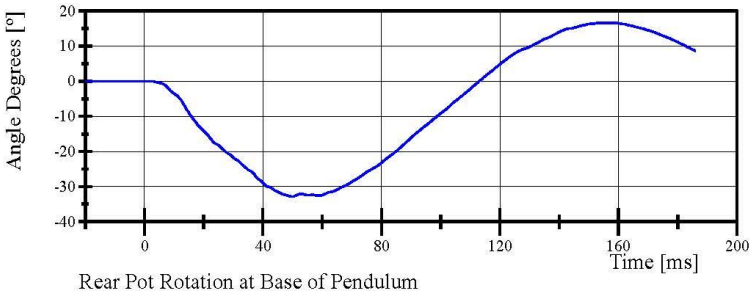
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.01.2022 11:04:13 1501

Transportation Research Center Inc.

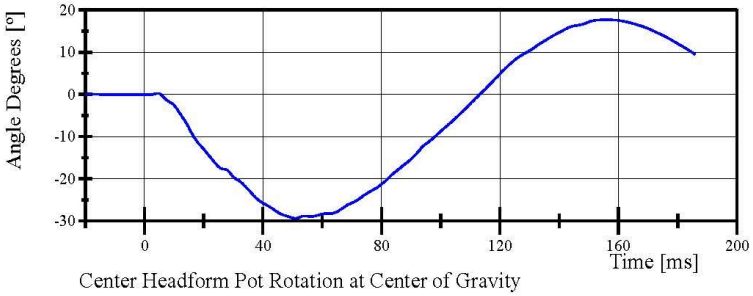
Left Lateral Neck
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Forward Pot Rotation at Base of Pendulum



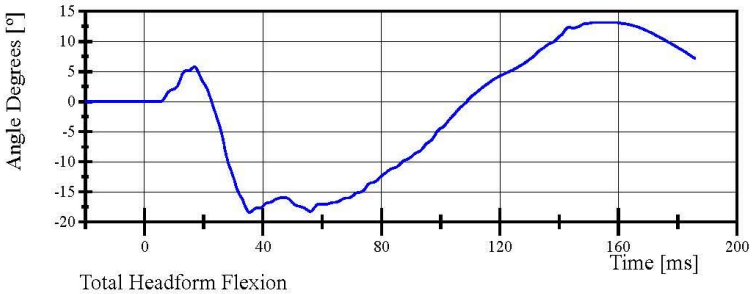
Filter Class: CFC_180
Max: 16.6 ° at 154.7 ms
Min: -32.8 ° at 49.9 ms

Rear Pot Rotation at Base of Pendulum



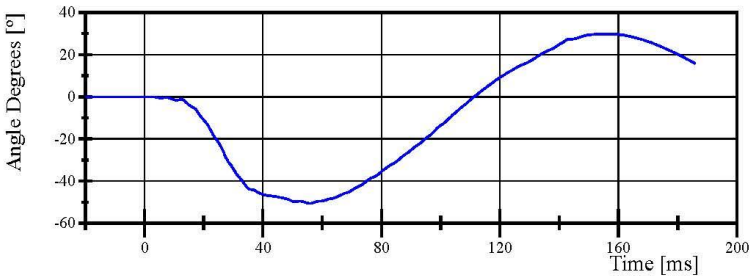
Filter Class: CFC_180
Max: 17.7 ° at 155.8 ms
Min: -29.4 ° at 51.0 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_180
Max: 13.1 ° at 152.2 ms
Min: -18.4 ° at 35.5 ms

Total Headform Flexion



Filter Class: CFC_180
Max: 29.8 ° at 154.6 ms
Min: -50.7 ° at 55.8 ms

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

03.01.2022 11:04:13 1501

Transportation Research Center Inc.

Left Lateral Shoulder
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.30 m/s	Yes
Test Probe Acceleration	(-7.5) - (-10.5) g	-10.18 g	Yes

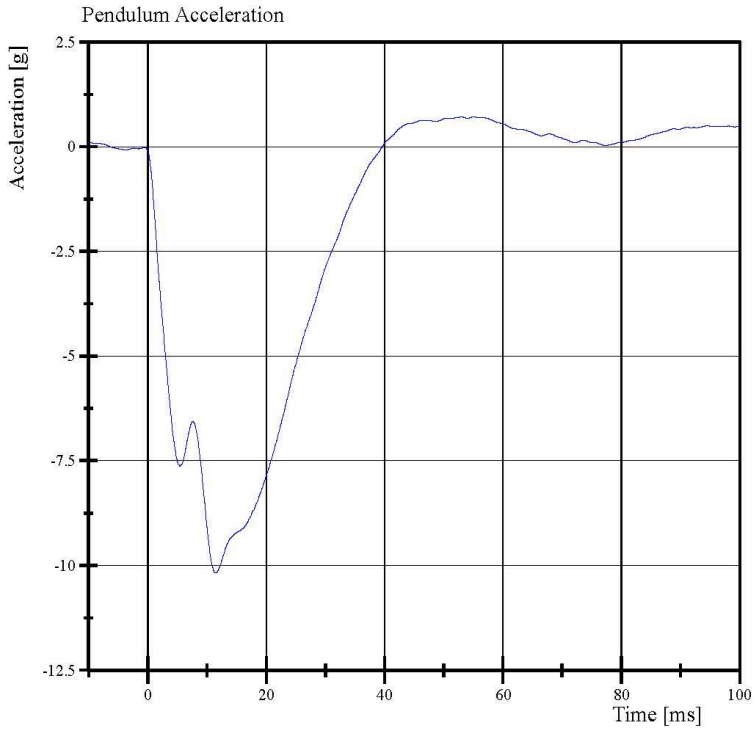
Test meets specifications.

Condition: Used

Comments:
Arm S/N: 175-3501-07014

Transportation Research Center Inc.

Left Lateral Shoulder
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022



Filter Class: CFC_180
Max: 0.7 g at 53.0 ms
Min: -10.2 g at 11.4 ms

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

03.03.2022 07:51:49 592

Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

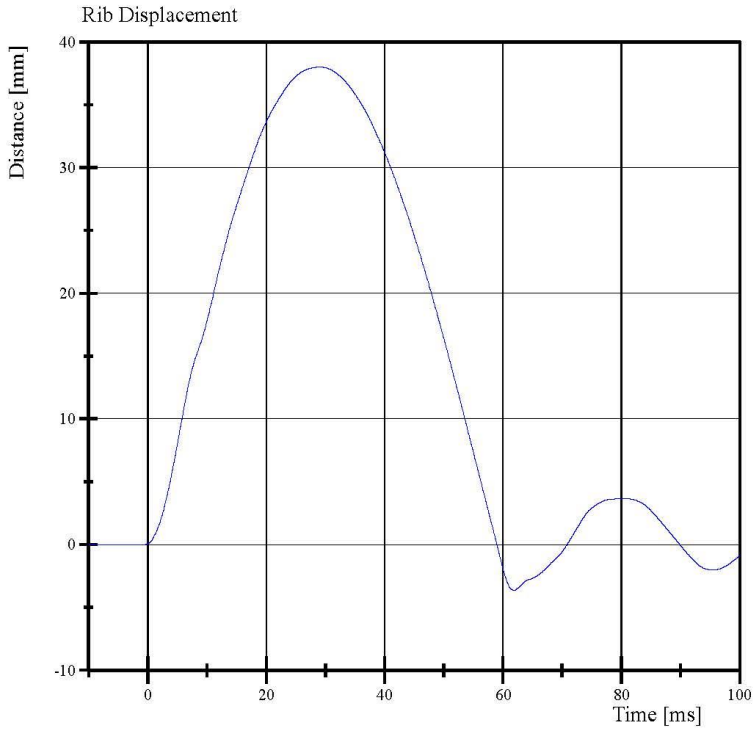
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.0 mm	Yes

Test meets specifications.

Condition: Used
Comments:
Drop Height: 462mm
Rib Module: 175-4008-A

Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022



Filter Class: CFC_180
Max: 38.0 mm at 29.1 ms
Min: -3.6 mm at 61.8 ms

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

03.01.2022 13:07:16 601

Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

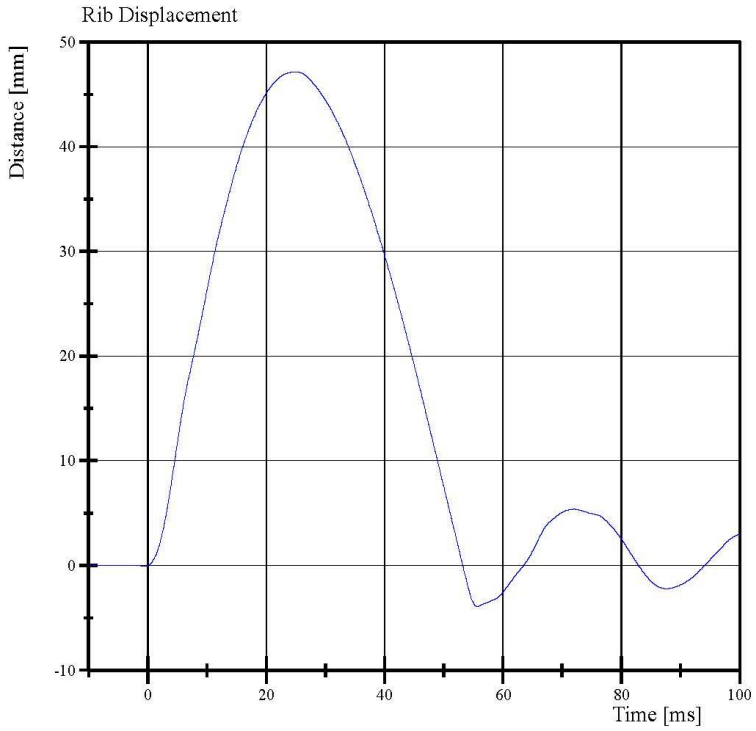
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	47.1 mm	Yes

Test meets specifications.

Condition: Used
Comments:
Drop Height: 816 mm
Rib Module: 175-4008-A-06-017

Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022



Filter Class: CFC_180
Max: 47.1 mm at 25.0 ms
Min: -3.9 mm at 55.7 ms

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

03.01.2022 12:53:20 525

Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.1 mm	Yes

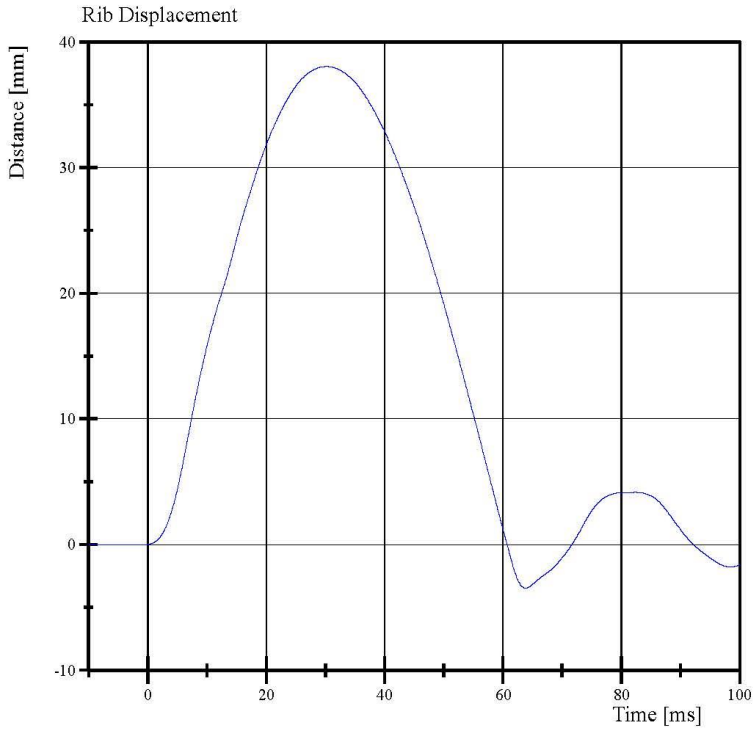
Test meets specifications.

Condition: Used

Comments:
Drop Height: 462mm
Rib Module: 175-4008-A

Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022



Filter Class: CFC_180
Max: 38.1 mm at 30.2 ms
Min: -3.5 mm at 63.8 ms

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

03.01.2022 13:14:19 588

Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	49.5 mm	Yes

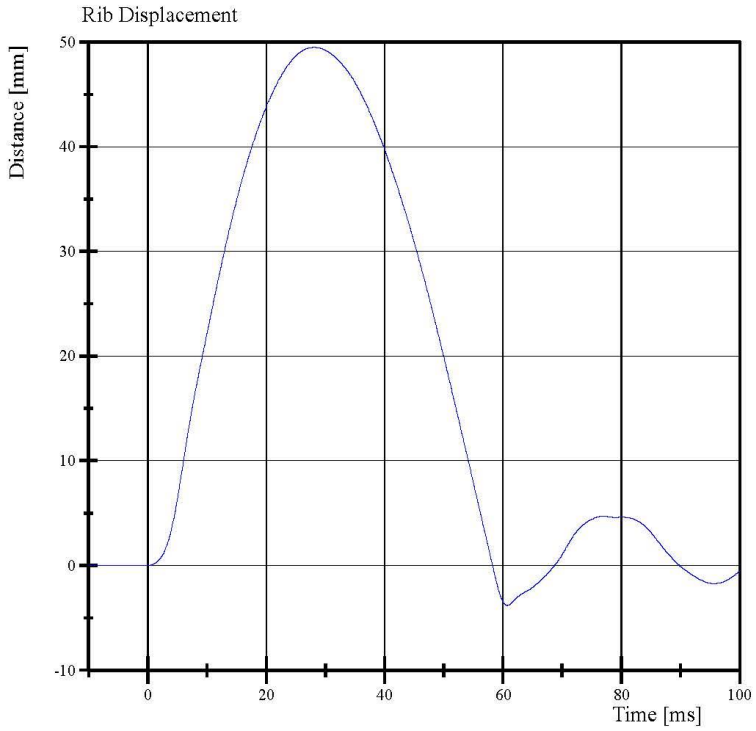
Test meets specifications.

Condition: Used

Comments:
Drop Height: 816mm
Rib Module: 175-4008-A

Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022



Filter Class: CFC_180
Max: 49.5 mm at 28.1 ms
Min: -3.8 mm at 60.7 ms

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

03.01.2022 13:05:26 504

Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	37.4 mm	Yes

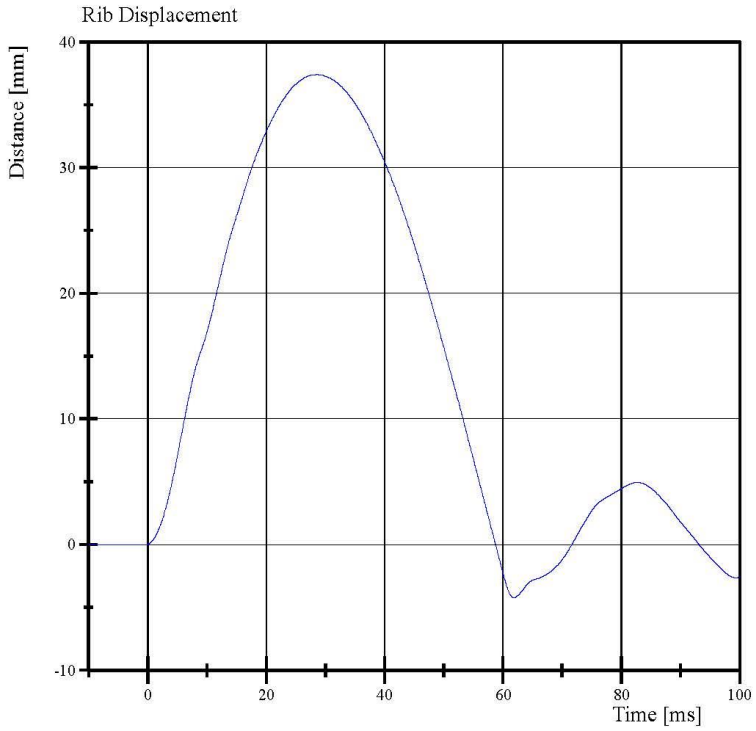
Test meets specifications.

Condition: Used

Comments:
Drop Height: 462mm
Rib Module: 175-4008-A-06-017

Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022



Filter Class: CFC_180
Max: 37.4 mm at 28.6 ms
Min: -4.2 mm at 61.8 ms

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

03.01.2022 13:36:30 623

Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	46.7 mm	Yes

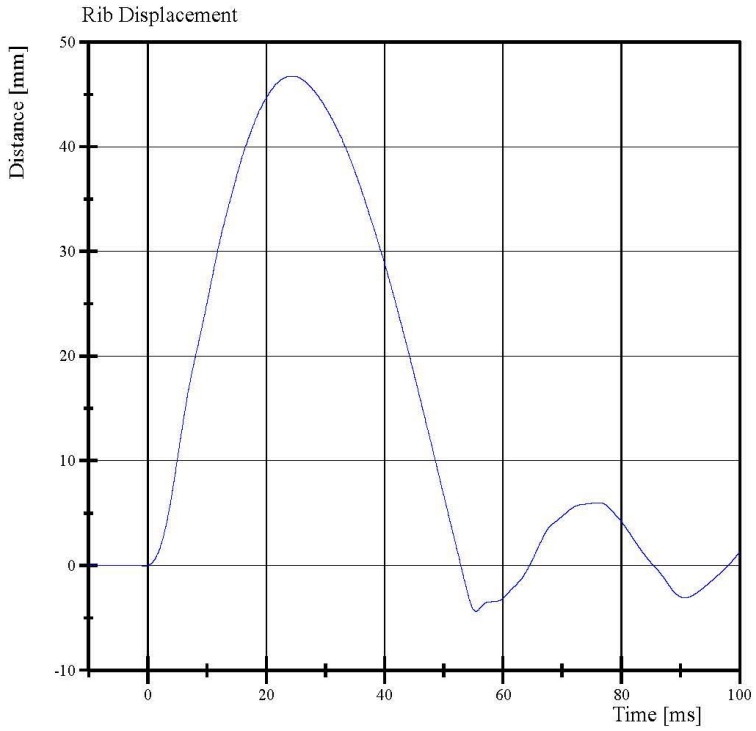
Test meets specifications.

Condition: Used

Comments:
Drop Height: 816 mm
Rib Module: 175-4008-A-06-017

Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/1/2022



Filter Class: CFC_180
Max: 46.7 mm at 24.4 ms
Min: -4.4 mm at 55.4 ms

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

03.01.2022 13:26:55 523

Transportation Research Center Inc.

Left Lower Thorax
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Impactor Velocity	5.4 - 5.60 m/s	5.462 m/s	Yes
Peak Impactor Force after 6 ms	(-5,100) - (-6,200) N	-5,454.0 N	Yes
Upper Rib Displacement	34 - 41 mm	40.1 mm	Yes
Center Rib Displacement	37 - 45 mm	41.7 mm	Yes
Lower Rib Displacement	37 - 44 mm	40.4 mm	Yes

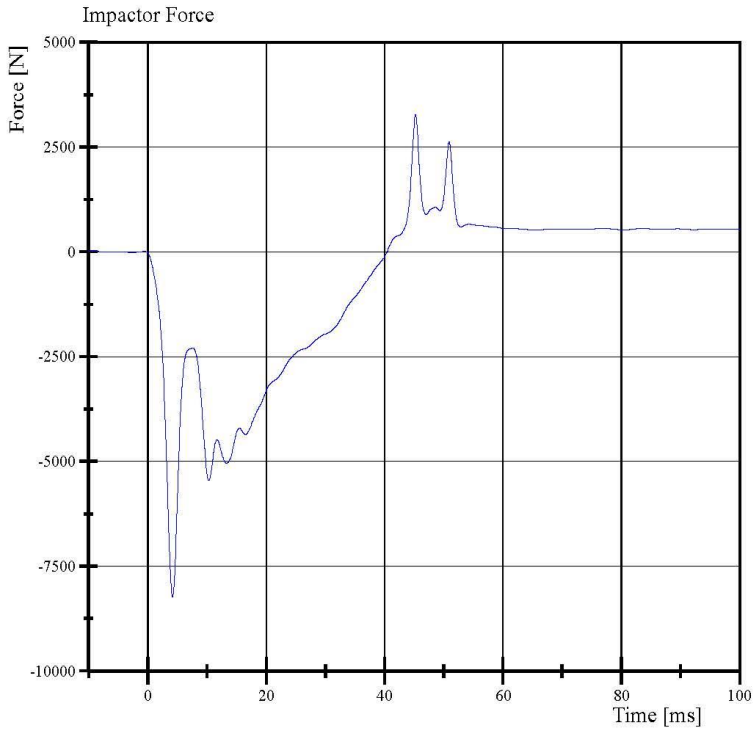
Test meets specifications.

Condition: Used

Comments:
Upper Rib Module S/N: 175-4008-A
Upper Rib Foam S/N: 175-4003-EK6973
Middle Rib Module S/N: 175-4008-A
Middle Rib Foam S/N: 175-4003-EK6970
Lower Rib Module S/N: 175-4008-A-06-017
Lower Rib Foam S/N: 175-4008-EK6971

Transportation Research Center Inc.

Left Lower Thorax
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022



Filter Class: CFC_180
Max: 3,272.6 N at 45.2 ms
Min: -8,238.3 N at 4.2 ms

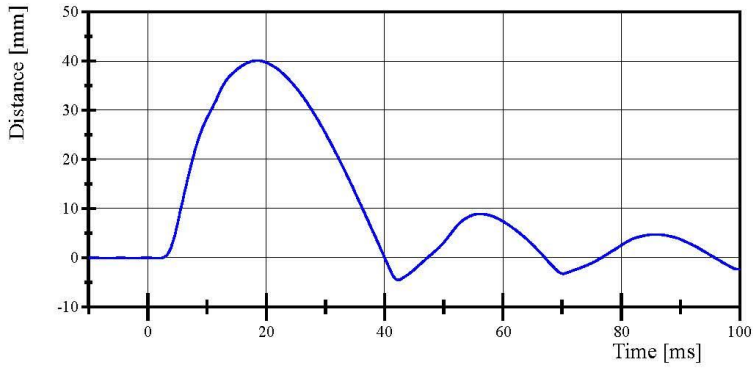
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.11.2022 08:03:02 475

Transportation Research Center Inc.

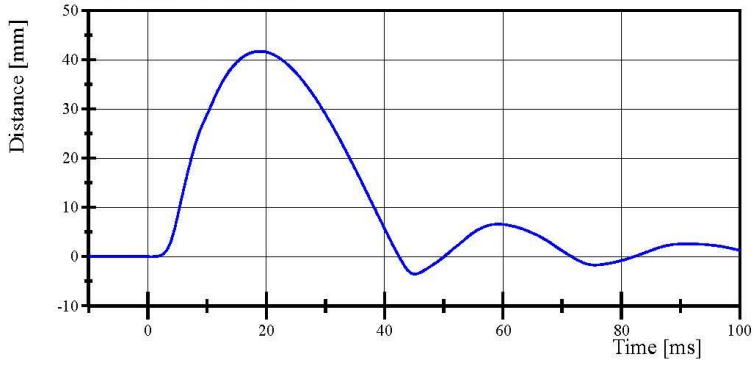
Left Lower Thorax
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022

Upper Rib Displacement



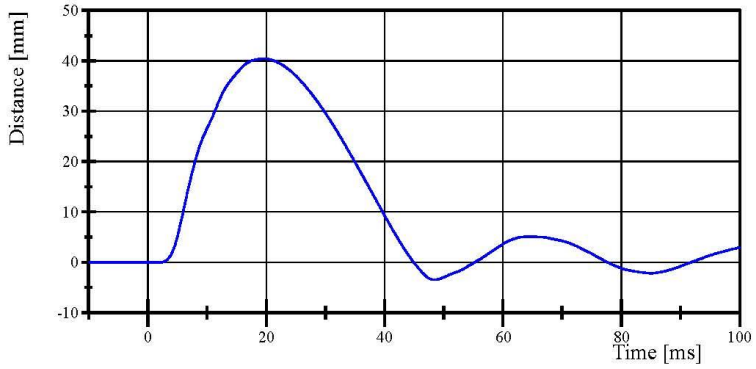
Filter Class: CFC_180
Max: 40.1 mm at 18.5 ms
Min: -4.5 mm at 42.3 ms

Center Rib Displacement



Filter Class: CFC_180
Max: 41.7 mm at 18.9 ms
Min: -3.6 mm at 45.1 ms

Lower Rib Displacement



Filter Class: CFC_180
Max: 40.4 mm at 19.6 ms
Min: -3.5 mm at 48.4 ms

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

03.11.2022 08:03:02 475

Transportation Research Center Inc.

Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 77-3
Test Date: 3/1/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-5.95) - (-6.15) m/s	-6.106 m/s	Yes
Maximum Headform Flexion			
Peak	(-45) - (-55) deg	-49.2 deg	Yes
Time of Peak	39 - 53 ms	42.9 ms	Yes
Headform Flexion Decay - Peak to Zero	37 - 57 ms	37.0 ms	Yes

Test meets specifications.

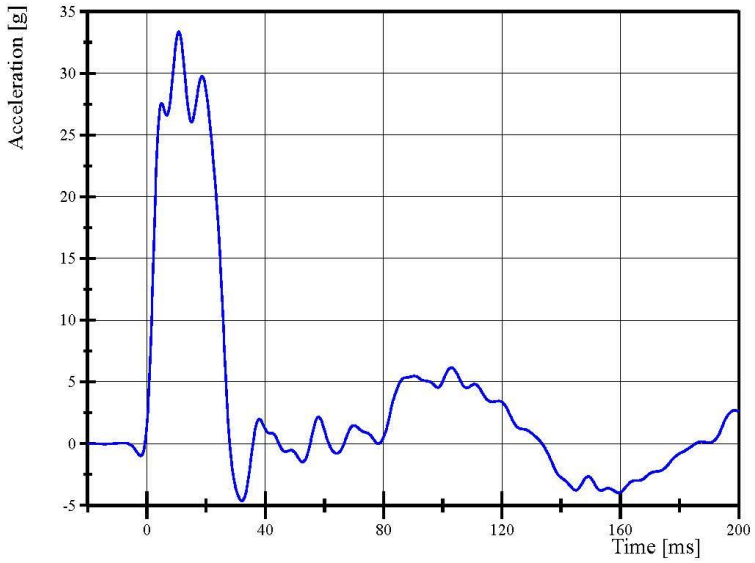
Condition: Used

Comments:
Lumbar S/N: 150365

Transportation Research Center Inc.

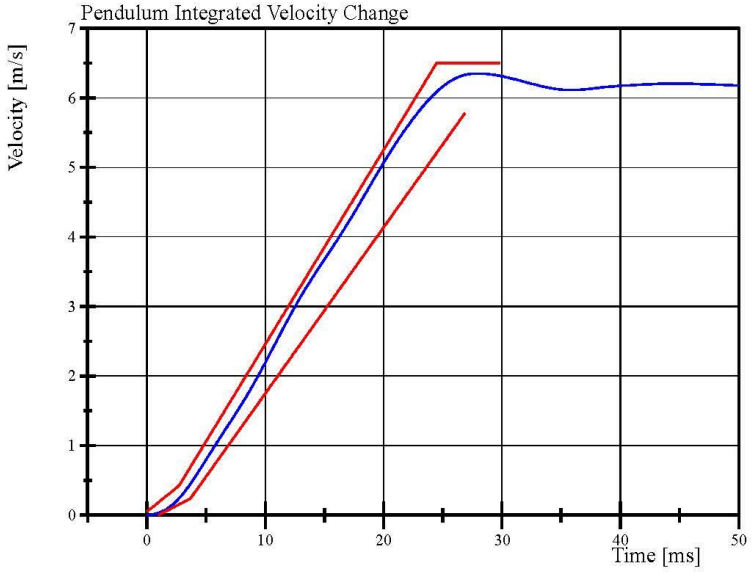
Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 77-3
Test Date: 3/1/2022

Pendulum Acceleration



Filter Class: CFC_60
Max: 33.4 g at 10.8 ms
Min: -4.6 g at 32.1 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_60
Max: 6.3 m/s at 28.0 ms
Min: 0.0 m/s at 0.0 ms

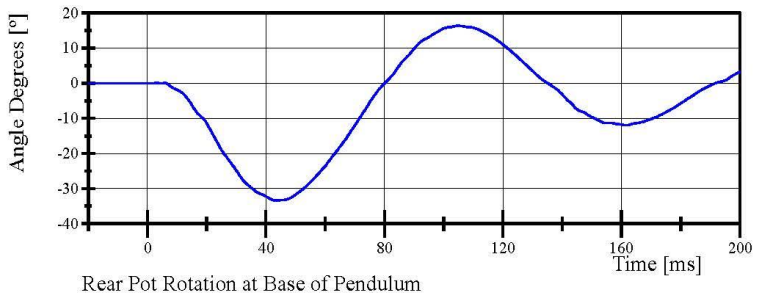
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.01.2022 10:13:39 674

Transportation Research Center Inc.

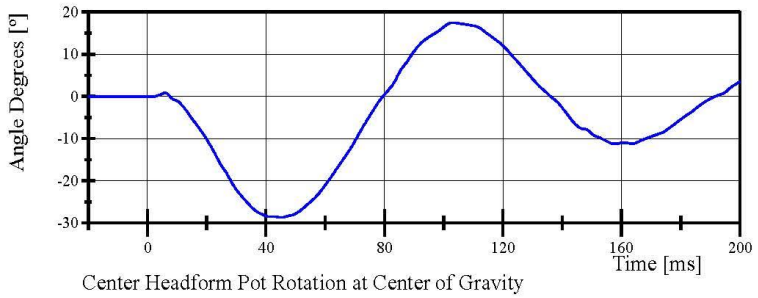
Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 77-3
Test Date: 3/1/2022

Forward Pot Rotation at Base of Pendulum



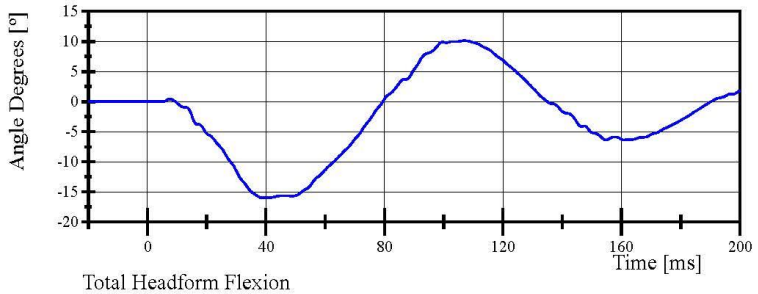
Filter Class: CFC_180
Max: 16.4 ° at 104.9 ms
Min: -33.4 ° at 43.4 ms

Rear Pot Rotation at Base of Pendulum



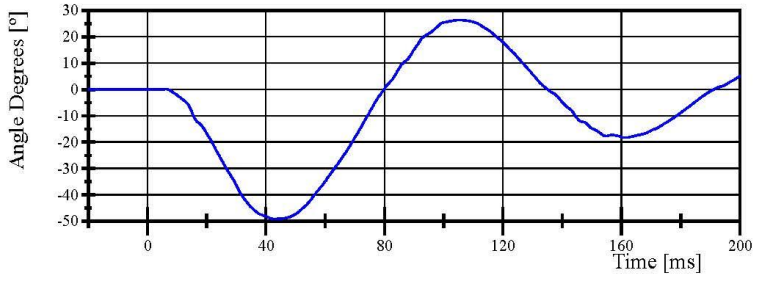
Filter Class: CFC_180
Max: 17.5 ° at 102.9 ms
Min: -28.7 ° at 45.1 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_180
Max: 10.1 ° at 106.8 ms
Min: -16.0 ° at 38.9 ms

Total Headform Flexion



Filter Class: CFC_180
Max: 26.4 ° at 105.4 ms
Min: -49.2 ° at 42.9 ms

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

03.01.2022 10:13:39 674

Transportation Research Center Inc.

Left Lateral Abdomen
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Test Probe Velocity	3.9 - 4.1 m/s	4.05 m/s	Yes
Test Probe Force			
Peak	4,000 - 4,800 N	4,347.5 N	Yes
Time of Peak	10.6 - 13.0 ms	10.88 ms	Yes
Total Abdominal Force			
Peak	2,200 - 2,700 N	2,338.2 N	Yes
Time of Peak	10.0 - 12.3 ms	10.32 ms	Yes

Test meets specifications.

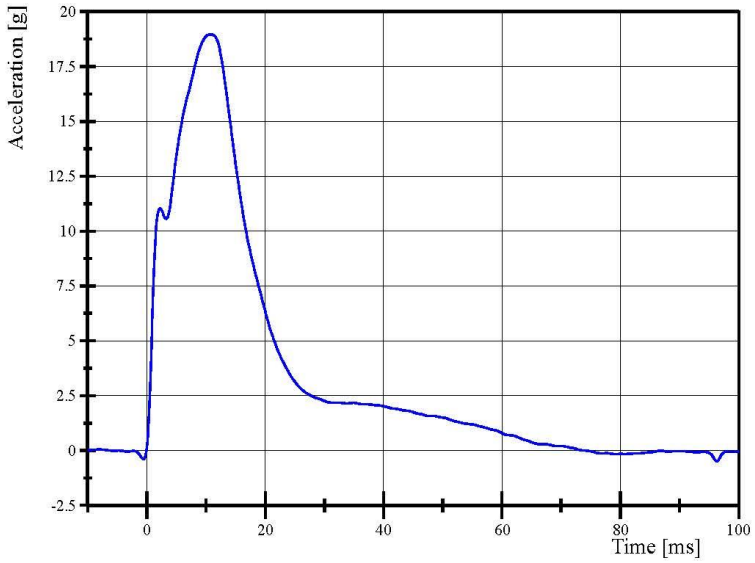
Condition: Used

Comments:
Abdomen S/N: 1066

Transportation Research Center Inc.

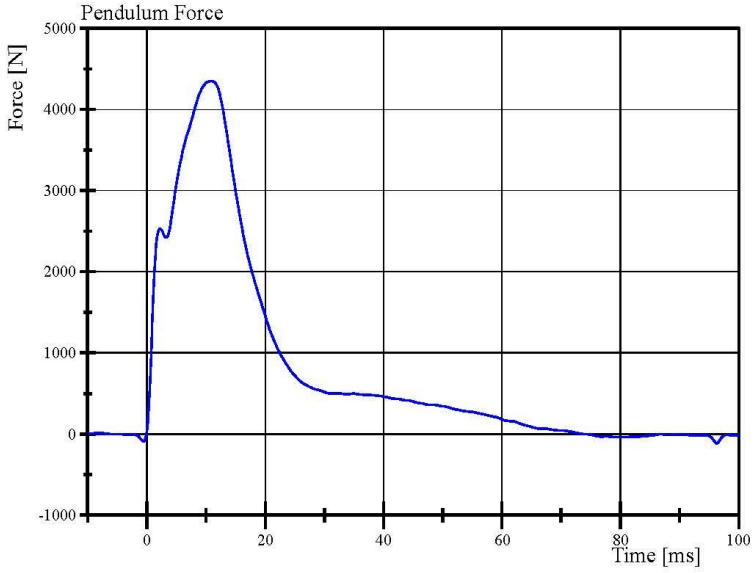
Left Lateral Abdomen
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022

Pendulum Acceleration



Filter Class: CFC_180
Max: 19.0 g at 10.9 ms
Min: -0.5 g at 96.3 ms

Pendulum Force



Filter Class: CFC_180
Max: 4,347.5 N at 10.9 ms
Min: -114.1 N at 96.3 ms

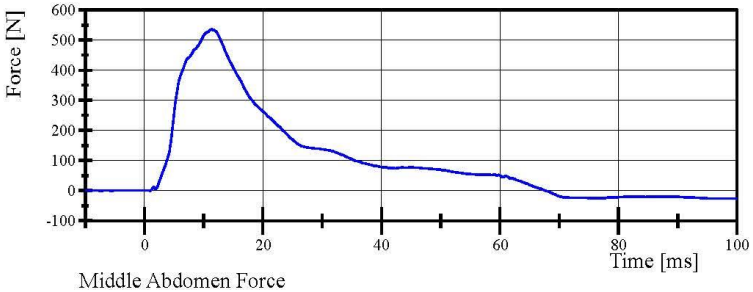
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.03.2022 08:27:57 619

Transportation Research Center Inc.

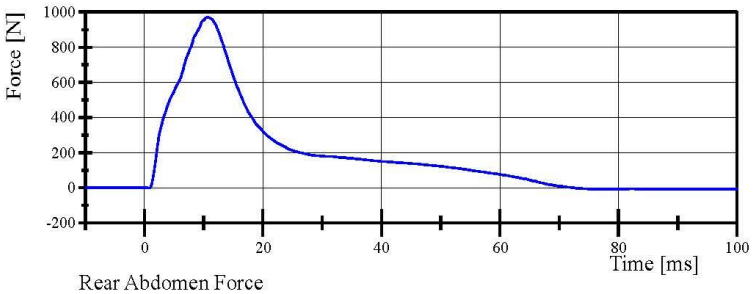
Left Lateral Abdomen
ES-2re Serial No. F030 Certification No. 77-1
Test Date: 3/3/2022

Front Abdomen Force



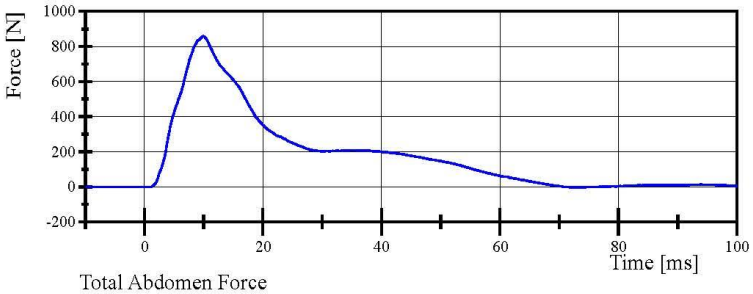
Filter Class: CFC_600
Max: 535.6 N at 11.4 ms
Min: -26.4 N at 98.2 ms

Middle Abdomen Force



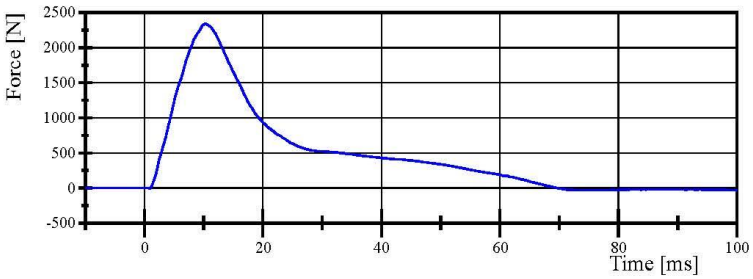
Filter Class: CFC_600
Max: 969.1 N at 10.6 ms
Min: -8.9 N at 99.3 ms

Rear Abdomen Force



Filter Class: CFC_600
Max: 858.1 N at 9.9 ms
Min: -3.3 N at 73.0 ms

Total Abdomen Force



Filter Class: CFC_600
Max: 2,338.2 N at 10.3 ms
Min: -34.0 N at 75.8 ms

Transportation Research Center Inc.

Left Lateral Pelvis
ES-2re Serial No. F030 Certification No. 77-6
Test Date: 3/3/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.31 m/s	Yes
Test Probe Force			
Peak	4,700 - 5,400 N	5,054.8 N	Yes
Time of Peak	11.8 - 16.1 ms	12.56 ms	Yes
Pubic Symphysis Force			
Peak	(-1,230) - (-1,590) N	-1,302.6 N	Yes
Time of Peak	12.2 - 17.0 ms	13.28 ms	Yes

Test meets specifications.

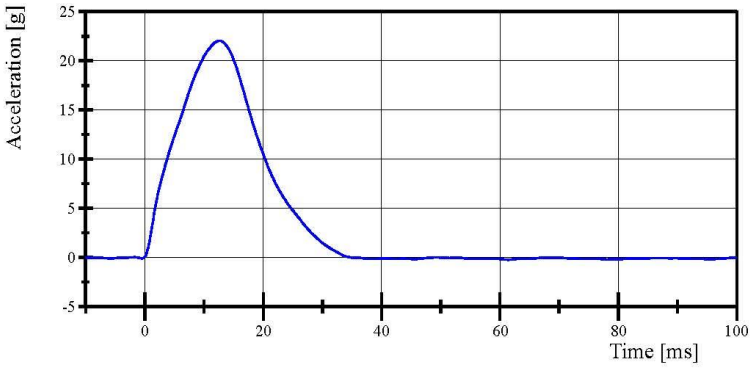
Condition: Used

Comments:
Pelvis Skin S/N: N/A

Transportation Research Center Inc.

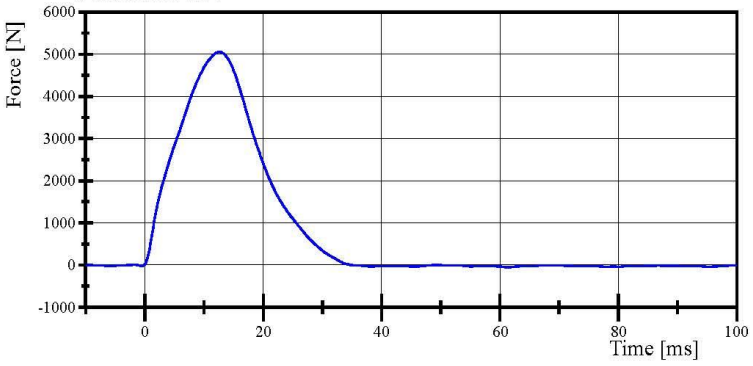
Left Lateral Pelvis
ES-2re Serial No. F030 Certification No. 77-6
Test Date: 3/3/2022

Pendulum Acceleration



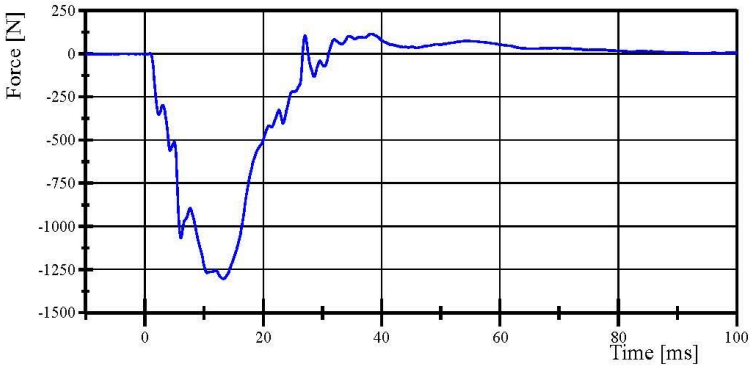
Filter Class: CFC_180
Max: 22.1 g at 12.6 ms
Min: -0.2 g at 61.4 ms

Pendulum Force



Filter Class: CFC_180
Max: 5,054.8 N at 12.6 ms
Min: -49.2 N at 61.4 ms

Pubic Symphysis Force



Filter Class: CFC_600
Max: 115.7 N at 38.2 ms
Min: -1,302.6 N at 13.3 ms

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

03.03.2022 14:26:48 615

Post-Test Calibration Sheets
Driver S/N F030

Transportation Research Center Inc.
572U ES-2re Dummy
External Dimensions
Serial No. F030 Calibration No. 78

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

Baseline 10/07/05

Transportation Research Center Inc.

Left Lateral Head Drop
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Peak Resultant Acceleration	125 - 155 g	131.8 g	Yes
Peak Longitudinal Acceleration	(-15) - 15 g	8.1 g	Yes
Is Resultant Acceleration Curve Unimodal within 15% of Main Pulse?	< 15 %	4.16 %	Yes

Test meets specifications.

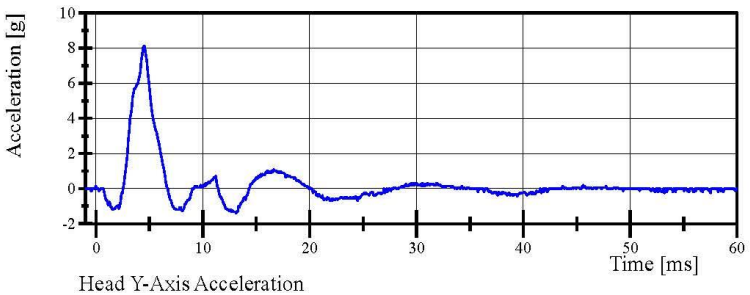
Condition: Used

Comments:
Head Skin S/N: DP6812

Transportation Research Center Inc.

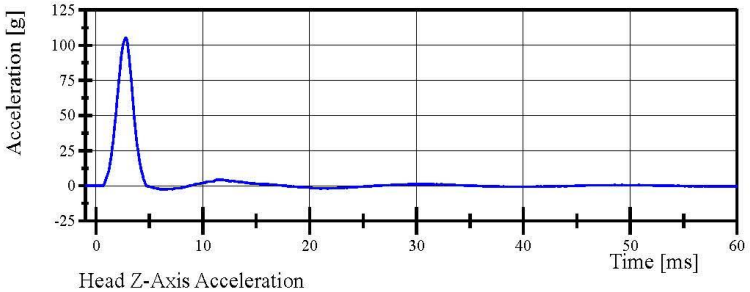
Left Lateral Head Drop
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Head X-Axis Acceleration



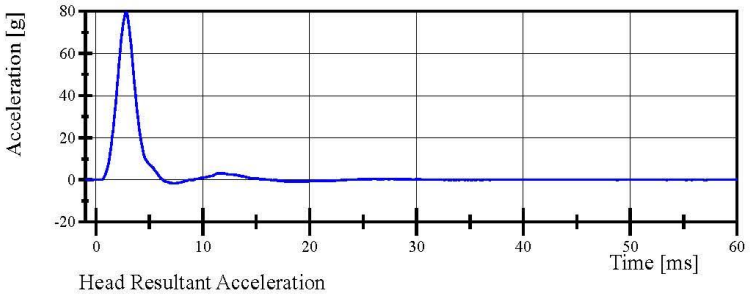
Filter Class: CFC_1000
Max: 8.1 g at 4.5 ms
Min: -1.4 g at 13.1 ms

Head Y-Axis Acceleration



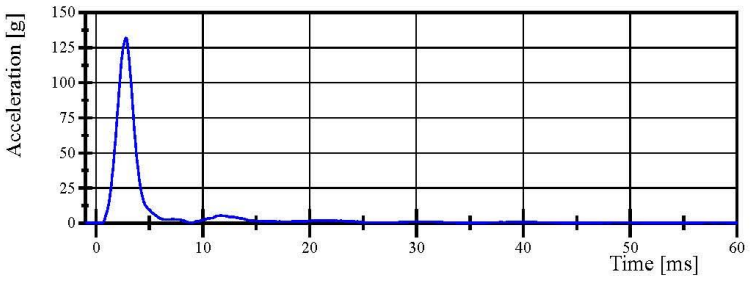
Filter Class: CFC_1000
Max: 105.2 g at 2.8 ms
Min: -2.6 g at 6.1 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 79.5 g at 2.8 ms
Min: -1.7 g at 7.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 131.8 g at 2.8 ms
Min: 0.0 g at -0.2 ms

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

03.18.2022 14:27:52 354

Transportation Research Center Inc.

Left Lateral Neck
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.36 m/s	Yes
Maximum Headform Flexion			
Peak	(-49) - (-59) deg	-51.7 deg	Yes
Time of Peak	54 - 66 ms	56.6 ms	Yes
Headform Flexion Decay - Peak to Zero	53 - 88 ms	56.4 ms	Yes

Test meets specifications.

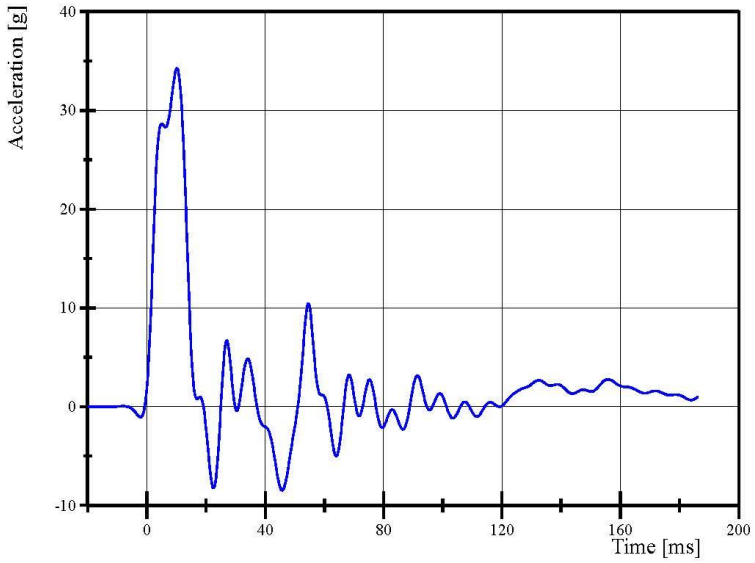
Condition: Used

Comments:
Neck S/N: 05053

Transportation Research Center Inc.

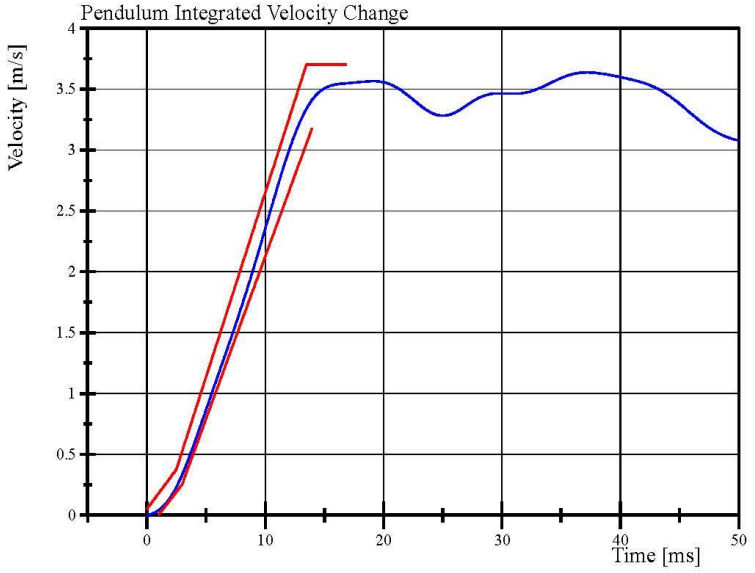
Left Lateral Neck
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Pendulum Acceleration



Filter Class: CFC_60
Max: 34.3 g at 10.2 ms
Min: -8.5 g at 45.8 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_60
Max: 3.6 m/s at 37.2 ms
Min: 0.0 m/s at 0.0 ms

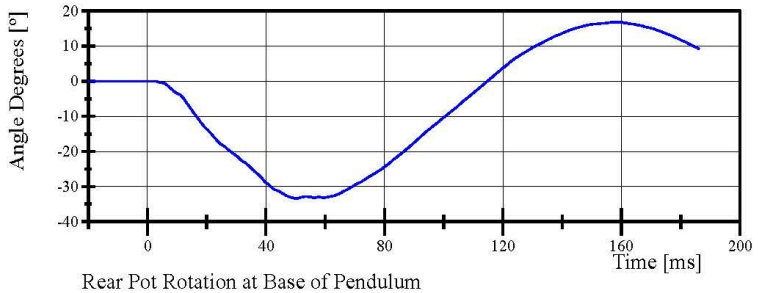
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.18.2022 15:00:36 1497

Transportation Research Center Inc.

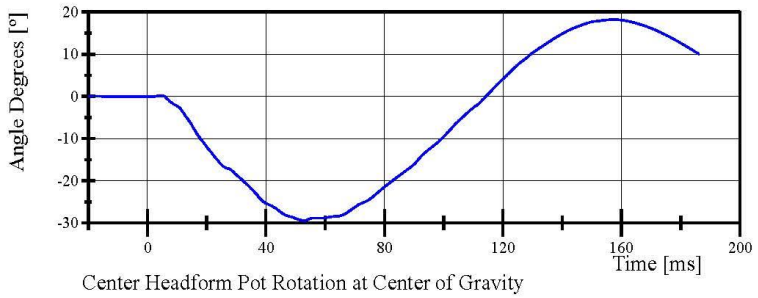
Left Lateral Neck
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Forward Pot Rotation at Base of Pendulum



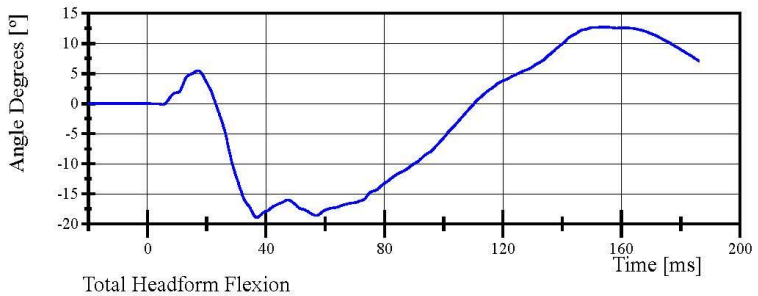
Filter Class: CFC_180
Max: 16.8 ° at 159.1 ms
Min: -33.4 ° at 50.2 ms

Rear Pot Rotation at Base of Pendulum



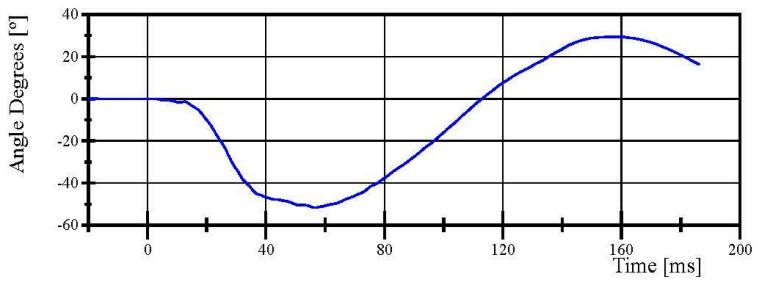
Filter Class: CFC_180
Max: 18.2 ° at 157.5 ms
Min: -29.5 ° at 52.9 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_180
Max: 12.7 ° at 154.6 ms
Min: -18.9 ° at 37.0 ms

Total Headform Flexion



Filter Class: CFC_180
Max: 29.4 ° at 156.4 ms
Min: -51.7 ° at 56.6 ms

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

03.18.2022 15:00:37 1497

Transportation Research Center Inc.

Left Lateral Shoulder
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.30 m/s	Yes
Test Probe Acceleration	(-7.5) - (-10.5) g	-10.18 g	Yes

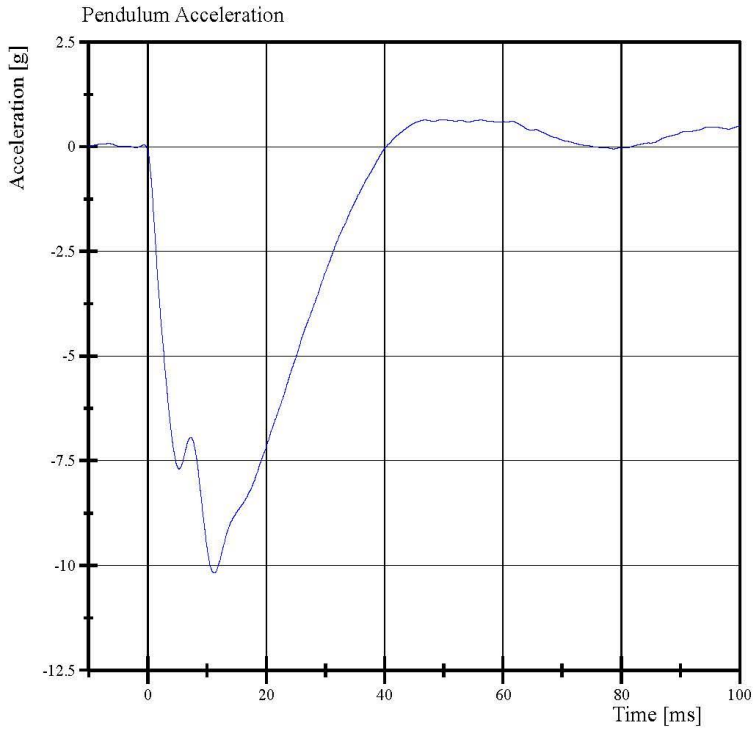
Test meets specifications.

Condition: Used

Comments:
Arm S/N: 175-3501-07014

Transportation Research Center Inc.

Left Lateral Shoulder
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022



Filter Class: CFC_180
Max: 0.6 g at 49.8 ms
Min: -10.2 g at 11.2 ms

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

03.21.2022 09:38:24 600

Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

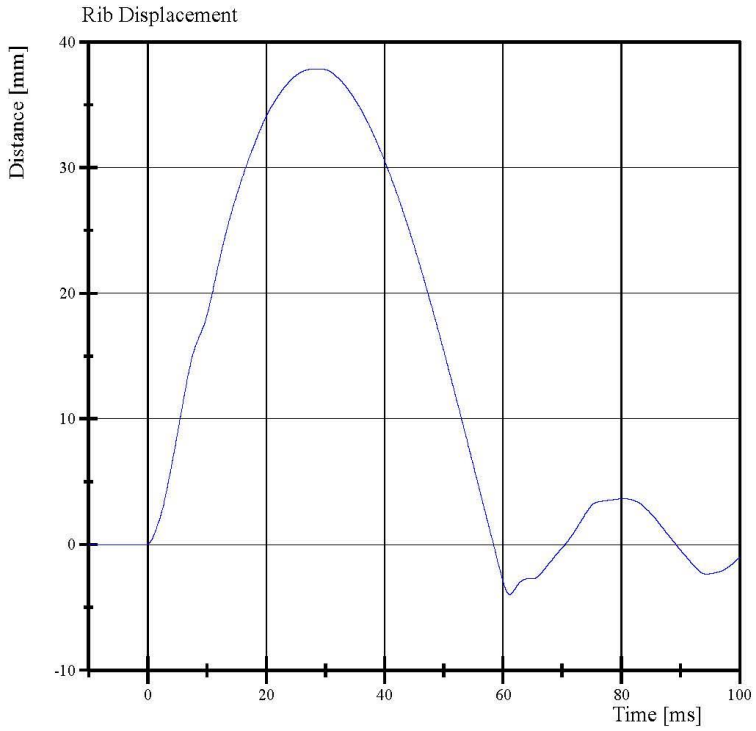
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	37.9 mm	Yes

Test meets specifications.

Condition: Used
Comments:
Drop Height: 462mm
Rib Module: 175-4008-A

Transportation Research Center Inc.

3.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022



Filter Class: CFC_180
Max: 37.9 mm at 29.0 ms
Min: -4.0 mm at 61.1 ms

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

03.18.2022 15:45:40 625

Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

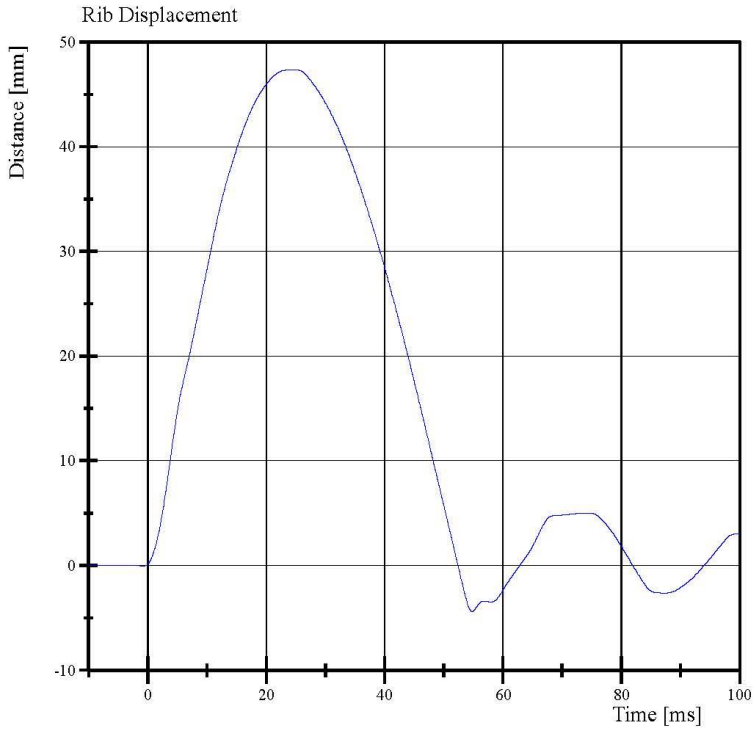
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	47.3 mm	Yes

Test meets specifications.

Condition: Used
Comments:
Drop Height: 816 mm
Rib Module: 175-4008-A-06-017

Transportation Research Center Inc.

4.0 m/s Upper Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022



Filter Class: CFC_180
Max: 47.3 mm at 24.8 ms
Min: -4.4 mm at 54.8 ms

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

03.18.2022 15:40:17 527

Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	38.2 mm	Yes

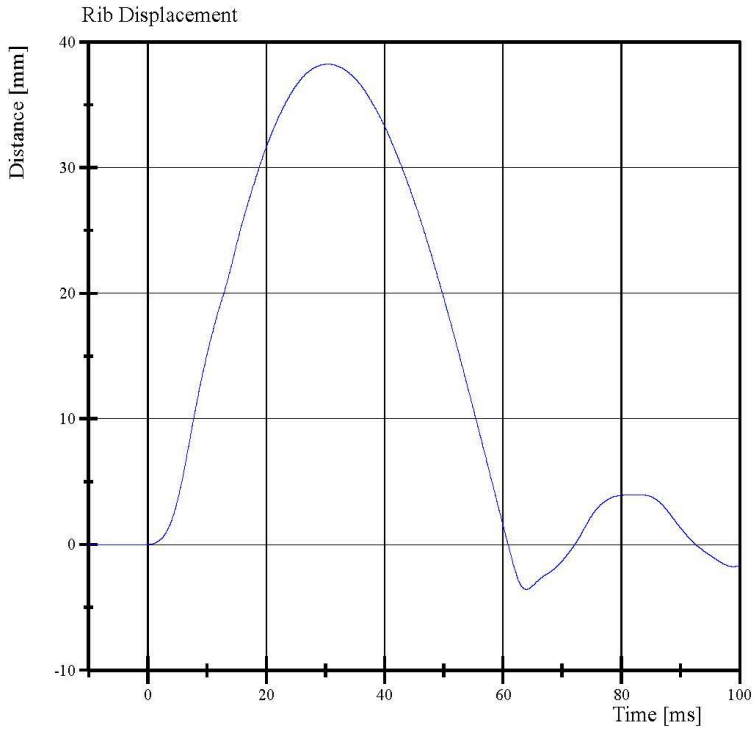
Test meets specifications.

Condition: Used

Comments:
Drop Height: 462mm
Rib Module: 175-4008-A

Transportation Research Center Inc.

3.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022



Filter Class: CFC_180
Max: 38.2 mm at 30.4 ms
Min: -3.6 mm at 63.9 ms

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

03.18.2022 15:59:55 589

Report Number: F030_ERF78

Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	49.7 mm	Yes

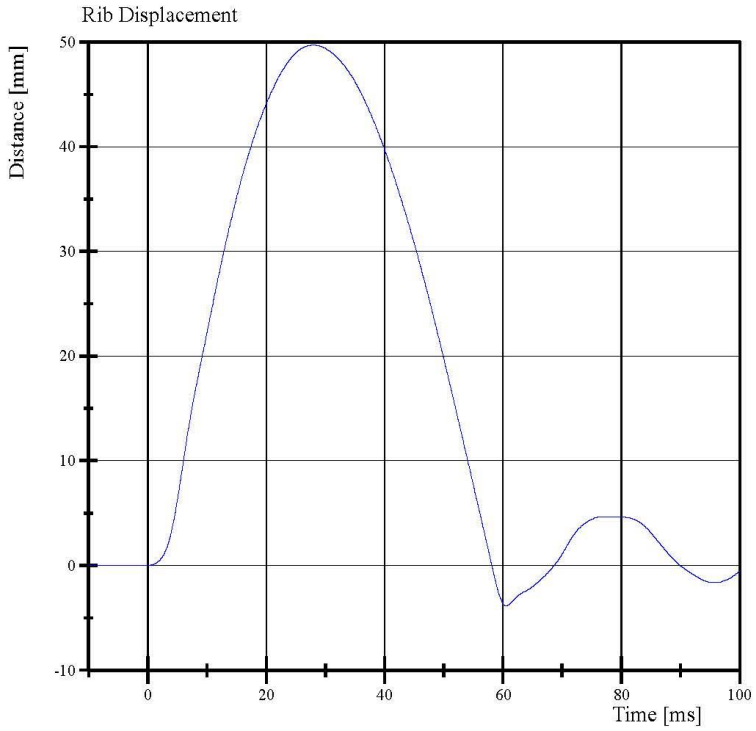
Test meets specifications.

Condition: Used

Comments:
Drop Height: 816mm
Rib Module: 175-4008-A

Transportation Research Center Inc.

4.0 m/s Middle Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022



Filter Class: CFC_180
Max: 49.7 mm at 27.9 ms
Min: -3.9 mm at 60.6 ms

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

03.18.2022 15:53:05 507

Report Number: F030_ERF78

Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
3.0 m/s Test Rib Displacement (454 mm to 464 mm)	36 - 40 mm	37.8 mm	Yes

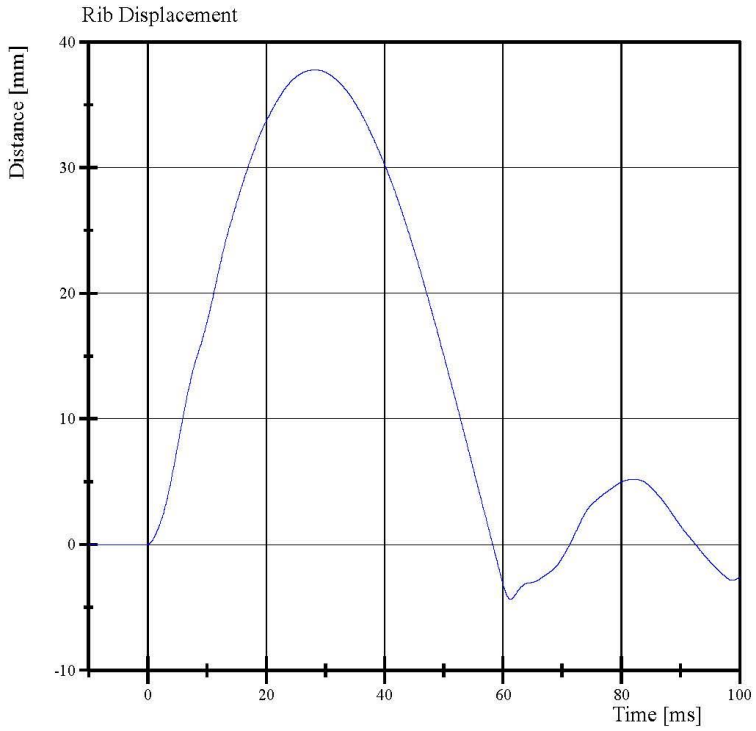
Test meets specifications.

Condition: Used

Comments:
Drop Height: 462mm
Rib Module: 175-4008-A-06-017

Transportation Research Center Inc.

3.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022



Filter Class: CFC_180
Max: 37.8 mm at 28.2 ms
Min: -4.4 mm at 61.3 ms

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

03.18.2022 16:13:25 629

Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
4.0 m/s Test Rib Displacement (807 mm to 823 mm)	46 - 51 mm	46.8 mm	Yes

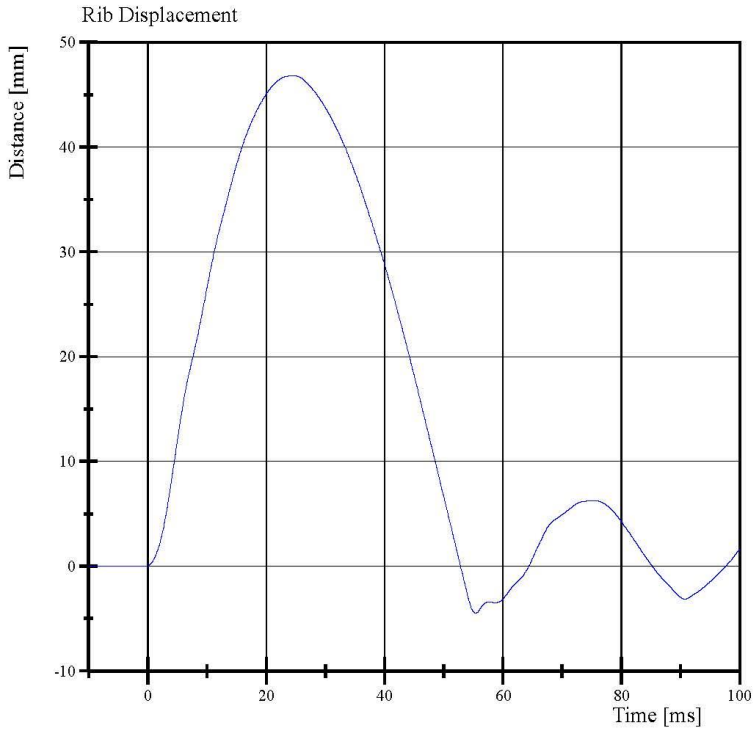
Test meets specifications.

Condition: Used

Comments:
Drop Height: 816 mm
Rib Module: 175-4008-A-06-017

Transportation Research Center Inc.

4.0 m/s Lower Full Rib Module
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022



Filter Class: CFC_180
Max: 46.8 mm at 24.6 ms
Min: -4.5 mm at 55.4 ms

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

03.18.2022 16:07:22 539

Report Number: F030_ERF78

Transportation Research Center Inc.

Left Lower Thorax
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Impactor Velocity	5.4 - 5.60 m/s	5.482 m/s	Yes
Peak Impactor Force after 6 ms	(-5,100) - (-6,200) N	-5,565.2 N	Yes
Upper Rib Displacement	34 - 41 mm	37.8 mm	Yes
Center Rib Displacement	37 - 45 mm	40.2 mm	Yes
Lower Rib Displacement	37 - 44 mm	39.3 mm	Yes

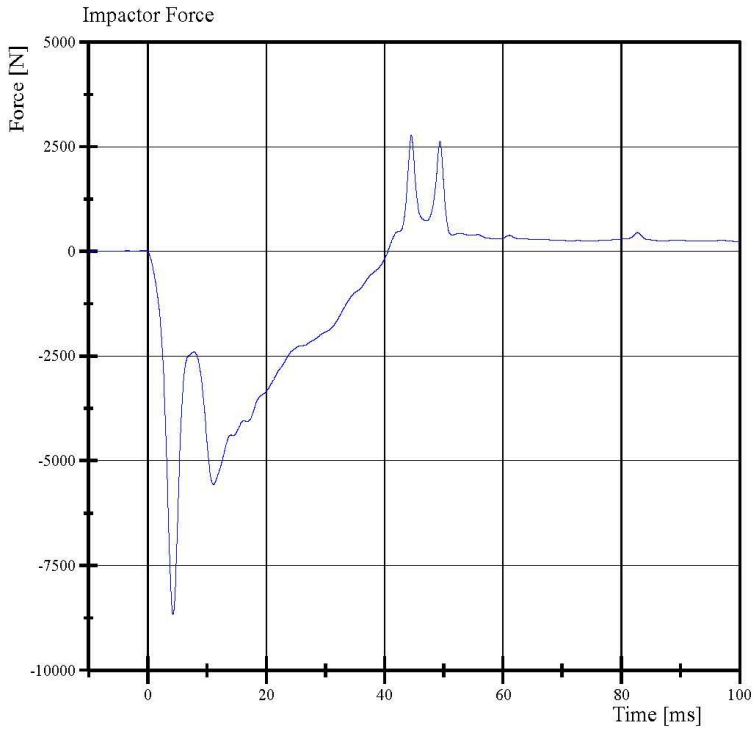
Test meets specifications.

Condition: Used

Comments:
Upper Rib Module S/N: 175-4008-A
Upper Rib Foam S/N: 175-4003-EK6973
Middle Rib Module S/N: 175-4008-A
Middle Rib Foam S/N: 175-4003-EK6970
Lower Rib Module S/N: 175-4008-A-06-017
Lower Rib Foam S/N: 175-4008-EK6971

Transportation Research Center Inc.

Left Lower Thorax
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022



Filter Class: CFC_180
Max: 2,771.2 N at 44.5 ms
Min: -8,669.6 N at 4.2 ms

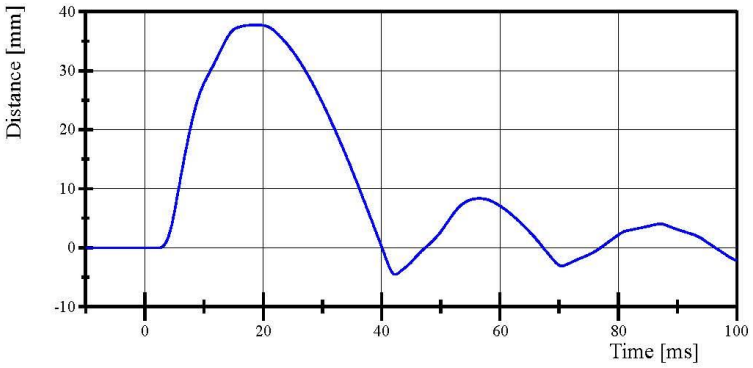
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.21.2022 09:53:57 492

Transportation Research Center Inc.

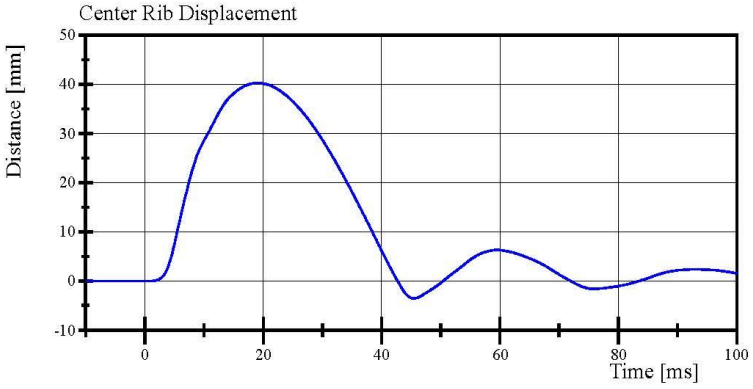
Left Lower Thorax
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Upper Rib Displacement



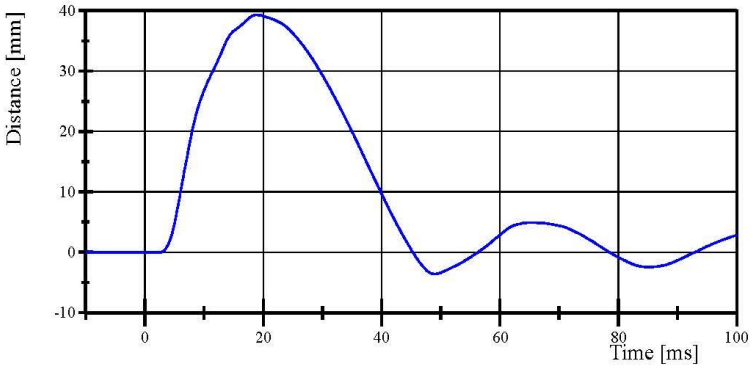
Filter Class: CFC_180
Max: 37.8 mm at 18.6 ms
Min: -4.5 mm at 42.3 ms

Center Rib Displacement



Filter Class: CFC_180
Max: 40.2 mm at 19.0 ms
Min: -3.6 mm at 45.4 ms

Lower Rib Displacement



Filter Class: CFC_180
Max: 39.3 mm at 18.9 ms
Min: -3.6 mm at 49.0 ms

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

03.21.2022 09:53:57 492

Transportation Research Center Inc.

Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Integrated Velocity Change within Corridor	Yes	Yes	Yes
Pendulum Velocity	(-5.95) - (-6.15) m/s	-6.109 m/s	Yes
Maximum Headform Flexion			
Peak	(-45) - (-55) deg	-47.7 deg	Yes
Time of Peak	39 - 53 ms	44.8 ms	Yes
Headform Flexion Decay - Peak to Zero	37 - 57 ms	36.2 ms	No

Test does not meet specifications.

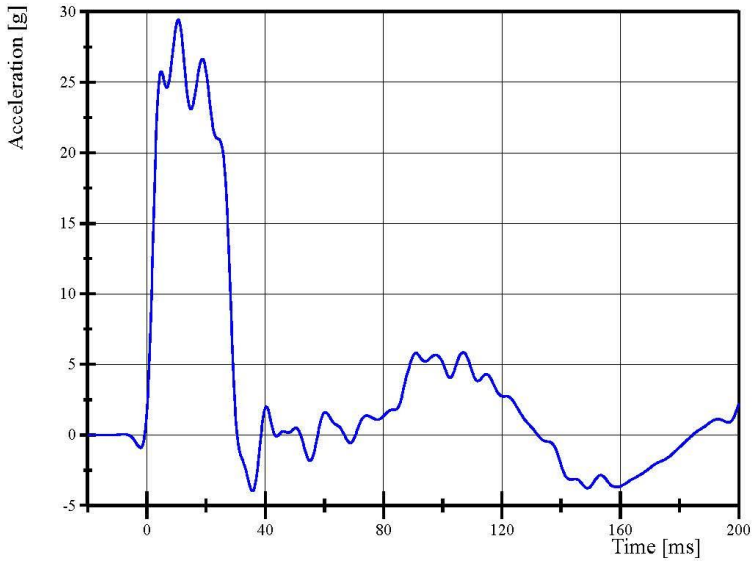
Condition: Used

Comments:
Lumbar S/N: 150365

Transportation Research Center Inc.

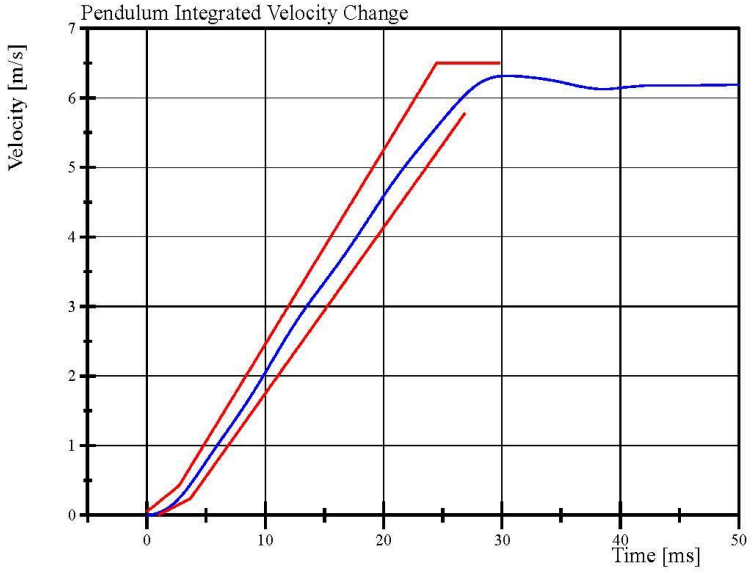
Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Pendulum Acceleration



Filter Class: CFC_60
Max: 29.4 g at 10.6 ms
Min: -4.0 g at 35.7 ms

Pendulum Integrated Velocity Change



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

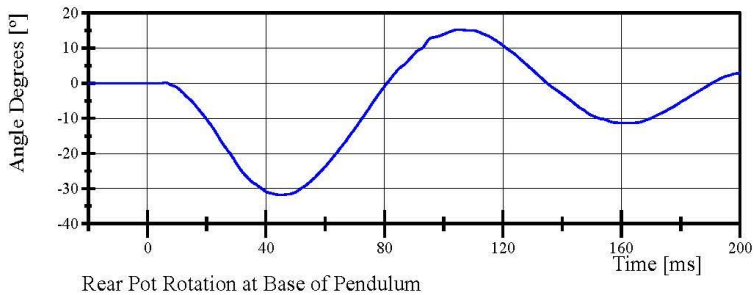
Specification Source: CFR49 Part 572 Subpart U
with Polarity in accordance with J211

03.18.2022 14:45:46 673

Transportation Research Center Inc.

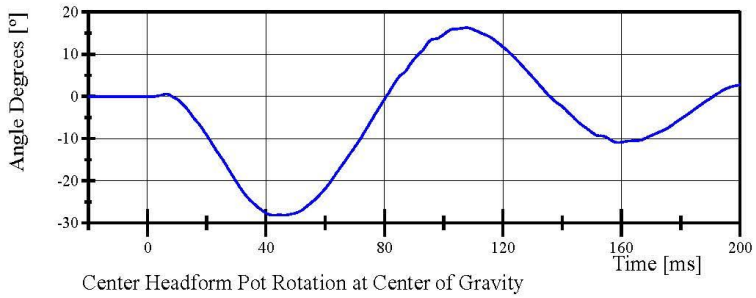
Left Lateral Lumbar
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/18/2022

Forward Pot Rotation at Base of Pendulum



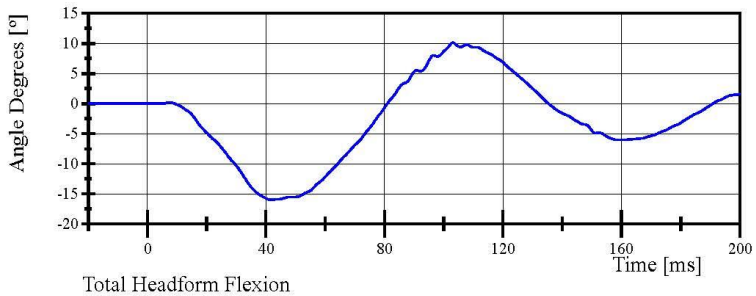
Filter Class: CFC_180
Max: 15.3 ° at 105.2 ms
Min: -31.8 ° at 45.2 ms

Rear Pot Rotation at Base of Pendulum



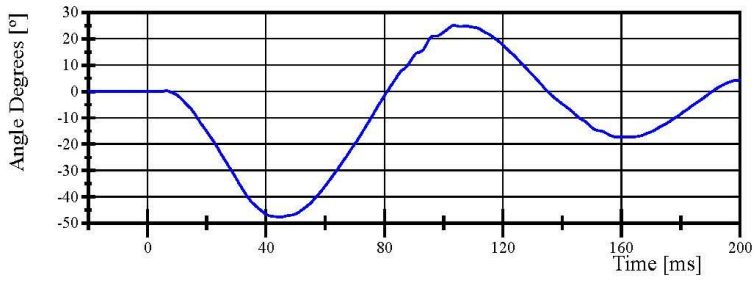
Filter Class: CFC_180
Max: 16.3 ° at 107.8 ms
Min: -28.2 ° at 42.6 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_180
Max: 10.1 ° at 103.1 ms
Min: -16.0 ° at 41.6 ms

Total Headform Flexion



Filter Class: CFC_180
Max: 25.1 ° at 103.4 ms
Min: -47.7 ° at 44.8 ms

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

03.18.2022 14:45:46 673

Transportation Research Center Inc.

Left Lateral Abdomen
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Test Probe Velocity	3.9 - 4.1 m/s	4.05 m/s	Yes
Test Probe Force			
Peak	4,000 - 4,800 N	4,131.7 N	Yes
Time of Peak	10.6 - 13.0 ms	11.52 ms	Yes
Total Abdominal Force			
Peak	2,200 - 2,700 N	2,450.5 N	Yes
Time of Peak	10.0 - 12.3 ms	10.72 ms	Yes

Test meets specifications.

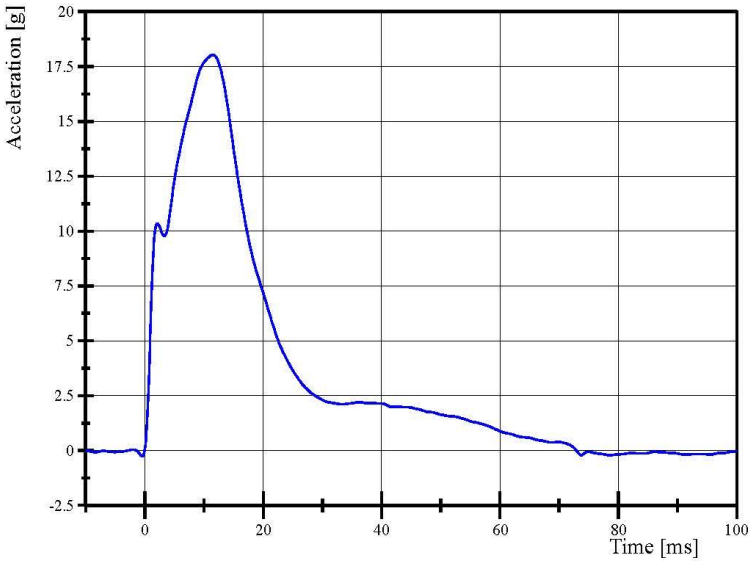
Condition: Used

Comments:
Abdomen S/N: 1066

Transportation Research Center Inc.

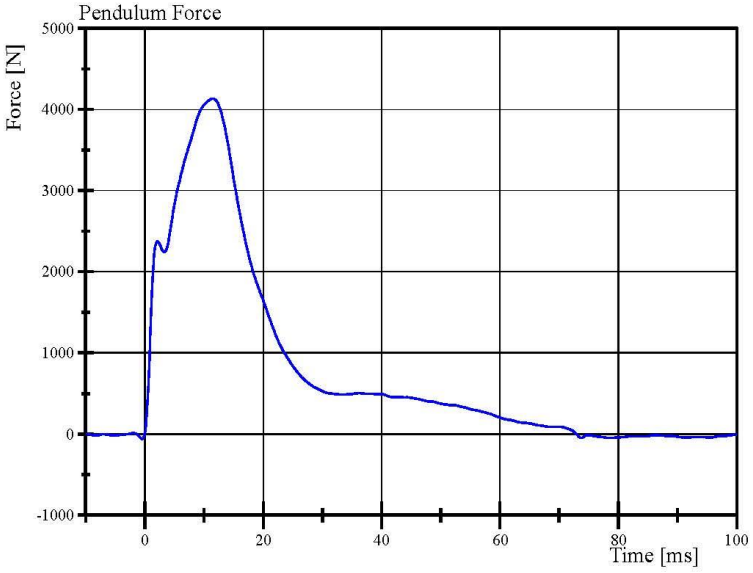
Left Lateral Abdomen
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Pendulum Acceleration



Filter Class: CFC_180
Max: 18.0 g at 11.5 ms
Min: -0.3 g at -0.5 ms

Pendulum Force



Filter Class: CFC_180
Max: 4,131.7 N at 11.5 ms
Min: -60.1 N at -0.5 ms

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

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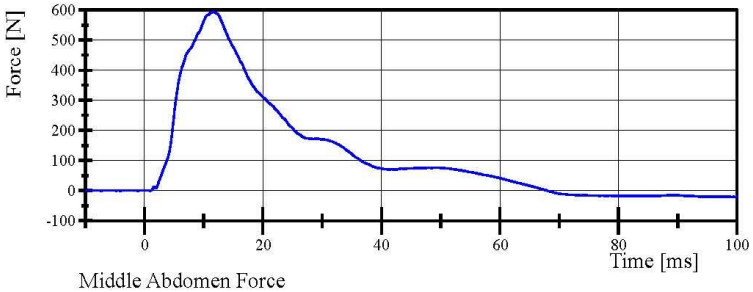
Transportation Research Center Inc.

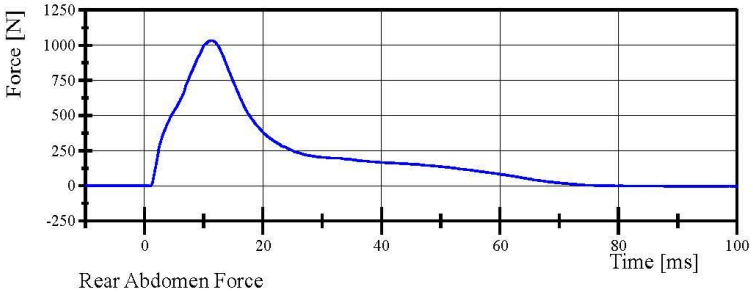
Left Lateral Abdomen
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Front Abdomen Force



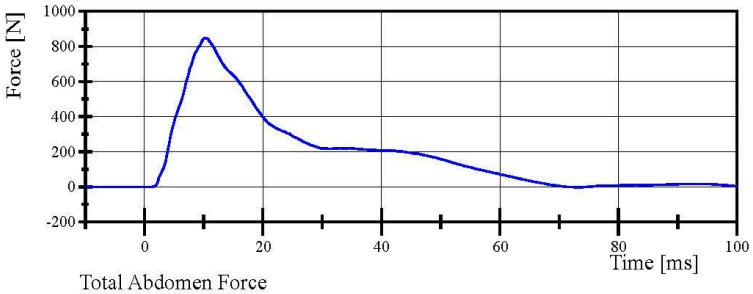
Filter Class: CFC_600
Max: 593.3 N at 11.5 ms
Min: -21.1 N at 99.1 ms

Middle Abdomen Force



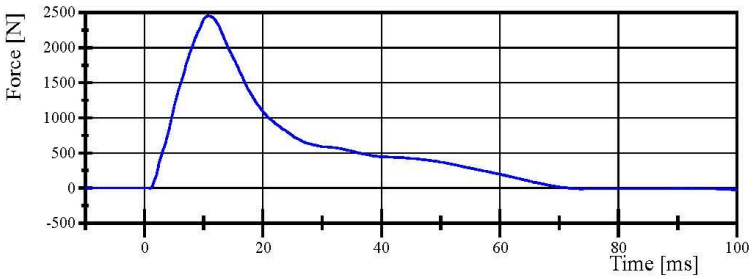
Filter Class: CFC_600
Max: 1,033.7 N at 11.4 ms
Min: -5.8 N at 99.2 ms

Rear Abdomen Force



Filter Class: CFC_600
Max: 848.4 N at 10.3 ms
Min: -3.3 N at 73.4 ms

Total Abdomen Force



Filter Class: CFC_600
Max: 2,450.5 N at 10.7 ms
Min: -21.5 N at 100.0 ms

Transportation Research Center Inc.

Left Lateral Pelvis
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Test Probe Velocity	4.2 - 4.4 m/s	4.31 m/s	Yes
Test Probe Force			
Peak	4,700 - 5,400 N	5,031.1 N	Yes
Time of Peak	11.8 - 16.1 ms	12.48 ms	Yes
Pubic Symphysis Force			
Peak	(-1,230) - (-1,590) N	-1,304.8 N	Yes
Time of Peak	12.2 - 17.0 ms	11.36 ms	No

Test does not meet specifications.

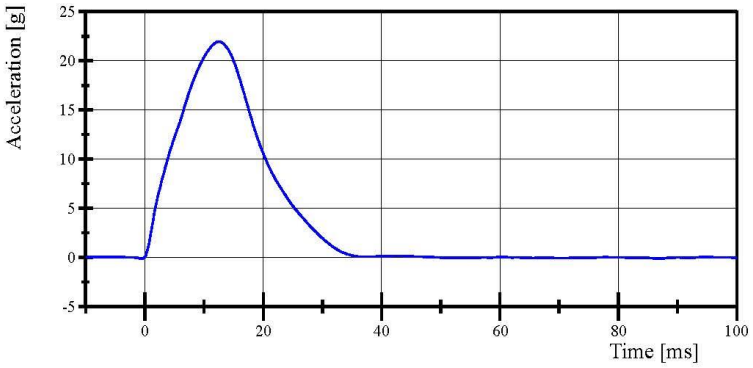
Condition: Used

Comments:
Pelvis Skin S/N: N/A

Transportation Research Center Inc.

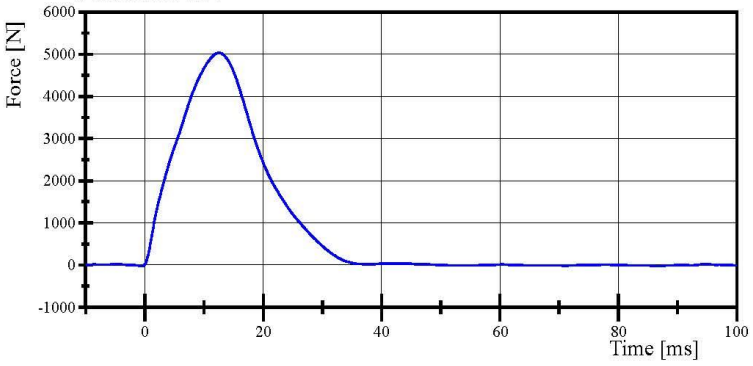
Left Lateral Pelvis
ES-2re Serial No. F030 Certification No. 78-1
Test Date: 3/21/2022

Pendulum Acceleration



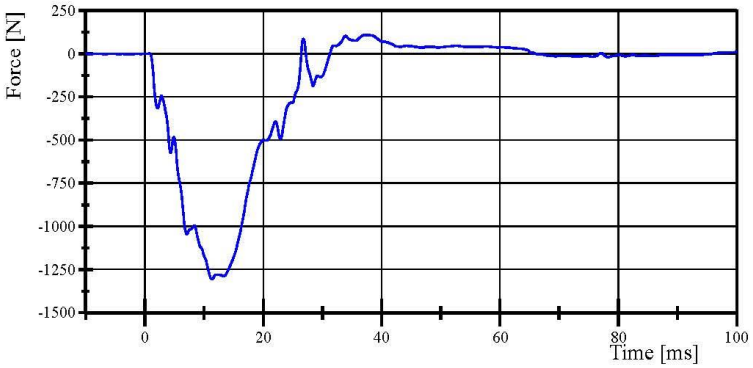
Filter Class: CFC_180
Max: 22.0 g at 12.5 ms
Min: -0.1 g at -0.6 ms

Pendulum Force



Filter Class: CFC_180
Max: 5,031.1 N at 12.5 ms
Min: -27.3 N at -0.6 ms

Pubic Symphysis Force



Filter Class: CFC_600
Max: 109.6 N at 37.1 ms
Min: -1,304.8 N at 11.4 ms

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

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Pre-Test Calibration Sheets
Passenger S/N DQ0570

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DQ0570 Calibration No. 10

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

Transportation Research Center Inc.

Left Lateral Head Drop
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/3/2022

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	134.5 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-5.1 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	< 15 %	1.11 %	Yes

Test meets specifications.

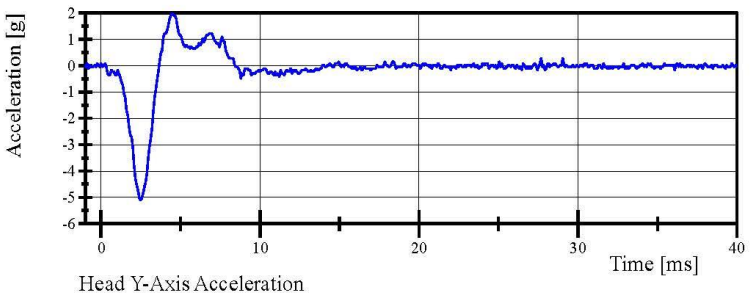
Condition: Used

Comments:
Head Skin S/N: DP6812

Transportation Research Center Inc.

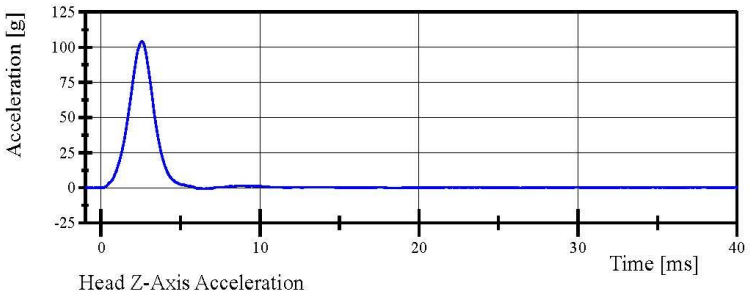
Left Lateral Head Drop
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/3/2022

Head X-Axis Acceleration



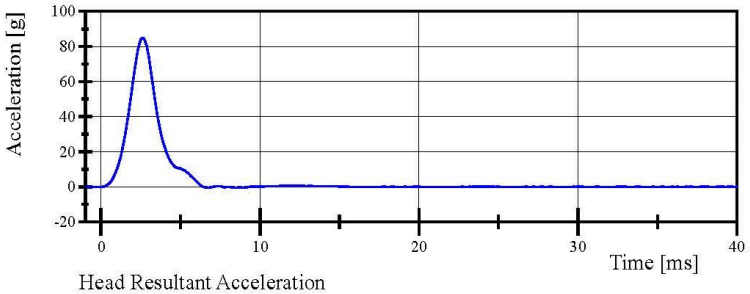
Filter Class: CFC_1000
Max: 2.0 g at 4.5 ms
Min: -5.1 g at 2.5 ms

Head Y-Axis Acceleration



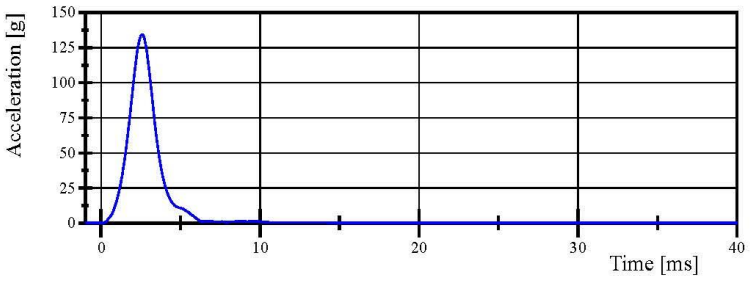
Filter Class: CFC_1000
Max: 104.2 g at 2.6 ms
Min: -0.7 g at 6.5 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 84.9 g at 2.6 ms
Min: -0.5 g at 6.7 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 134.5 g at 2.6 ms
Min: 0.0 g at -0.2 ms

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

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Transportation Research Center Inc.

Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 10-5
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 ℃	21.9 ℃	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.611 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	2.20 - 2.80 m/s	2.572 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.858 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	5.221 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.835 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.873 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-73.5 deg	Yes
Time of Peak	50 - 70 ms	58.1 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	42.6 N·m	Yes
Total Neck Occipital Condyles Moment Decay Time to 0 N·m	102 - 126 ms	115.0 ms	Yes

Test meets specifications.

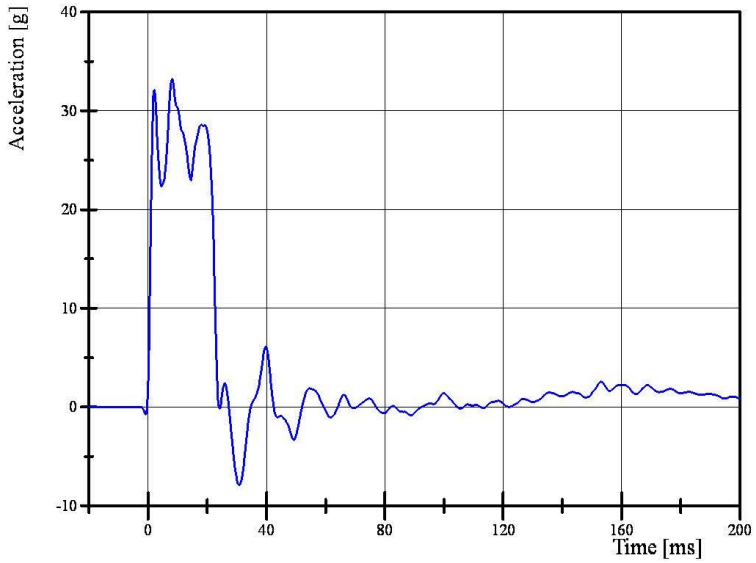
Condition: Used

Comments:
Neck S/N: 717

Transportation Research Center Inc.

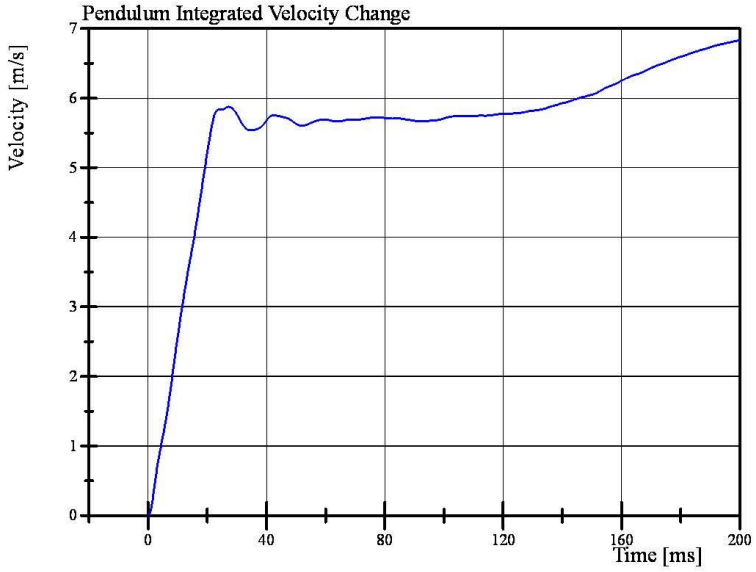
Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 10-5
Test Date: 3/7/2022

Pendulum Acceleration



Filter Class: CFC_180
Max: 33.2 g at 8.2 ms
Min: -7.9 g at 30.8 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 6.8 m/s at 200.0 ms
Min: 0.0 m/s at 0.0 ms

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

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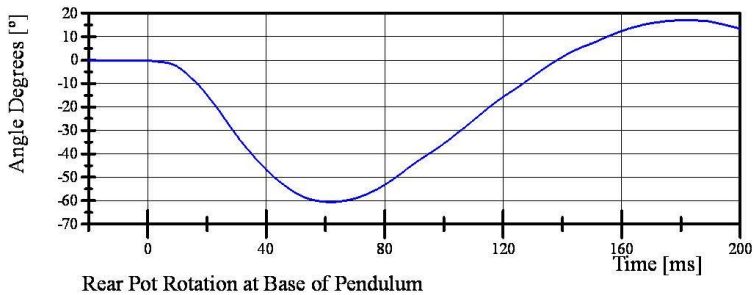
Transportation Research Center Inc.

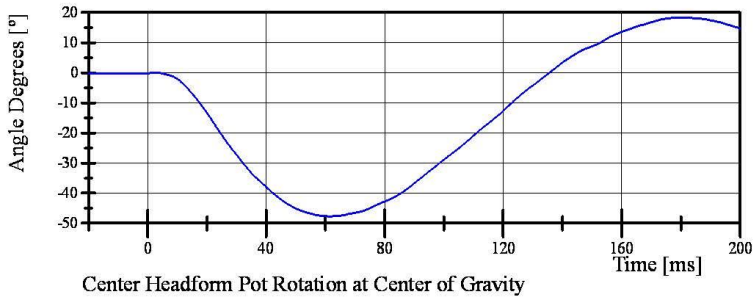
Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 10-5
Test Date: 3/7/2022

Forward Pot Rotation at Base of Pendulum



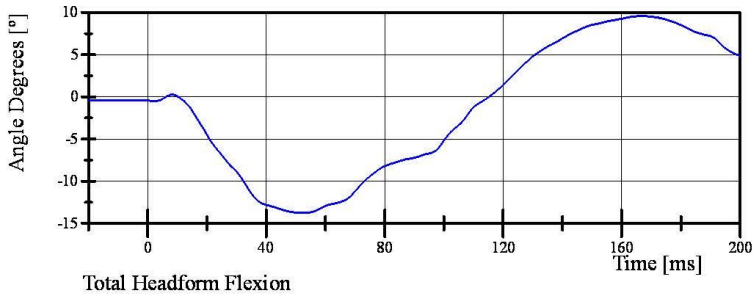
Filter Class: CFC_60
Max: 17.0 ° at 180.6 ms
Min: -60.6 ° at 61.9 ms

Rear Pot Rotation at Base of Pendulum



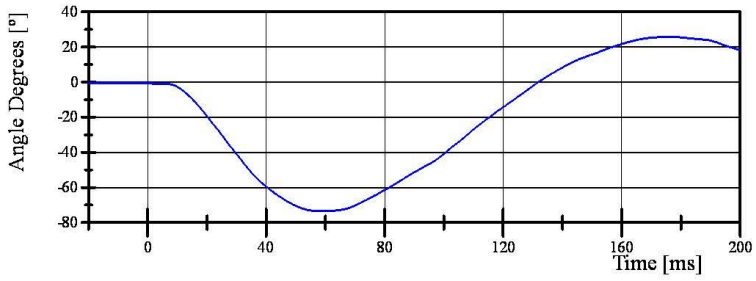
Filter Class: CFC_60
Max: 18.4 ° at 180.0 ms
Min: -47.7 ° at 61.4 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_60
Max: 9.6 ° at 166.9 ms
Min: -13.8 ° at 52.8 ms

Total Headform Flexion



Filter Class: CFC_60
Max: 25.8 ° at 175.8 ms
Min: -73.5 ° at 58.1 ms

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

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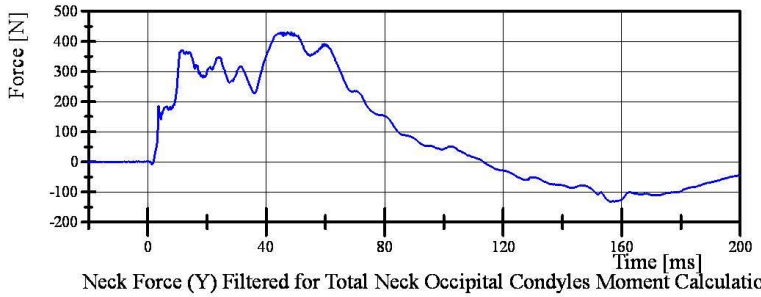
Transportation Research Center Inc.

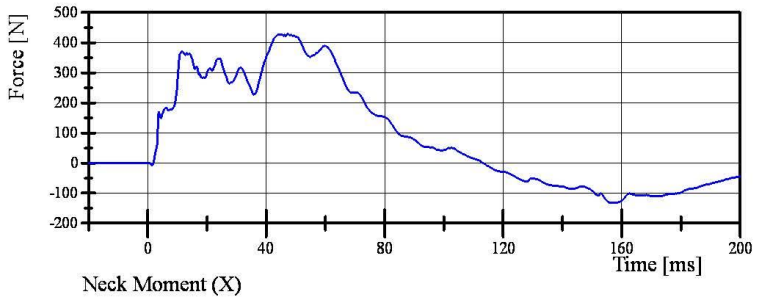
Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 10-5
Test Date: 3/7/2022

Neck Force (Y)



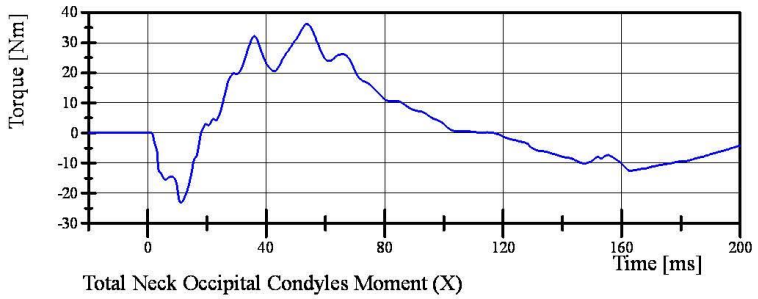
Filter Class: CFC_1000
Max: 431.0 N at 45.5 ms
Min: -132.2 N at 156.4 ms

Neck Force (Y) Filtered for Total Neck Occipital Condyles Moment Calculation



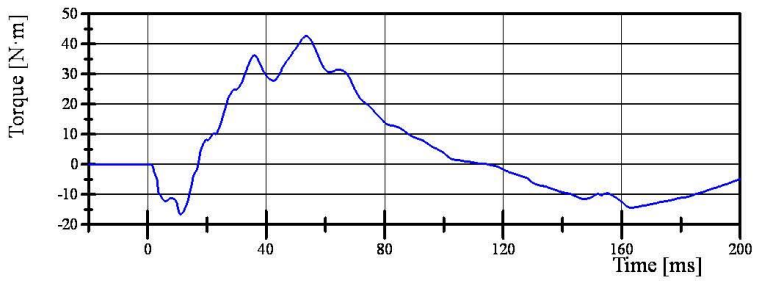
Filter Class: CFC_600
Max: 429.7 N at 47.2 ms
Min: -131.8 N at 156.4 ms

Neck Moment (X)



Filter Class: CFC_600
Max: 36.2 Nm at 53.8 ms
Min: -23.1 Nm at 11.1 ms

Total Neck Occipital Condyles Moment (X)



Filter Class: Without_(Constar
Max: 42.6 N·m at 53.7 ms
Min: -16.6 N·m at 11.0 ms

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

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Transportation Research Center Inc.

Left Lateral Shoulder
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.7 g	Yes
Shoulder Displacement	28 - 37 mm	30.3 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.3 g	Yes

Test meets specifications.

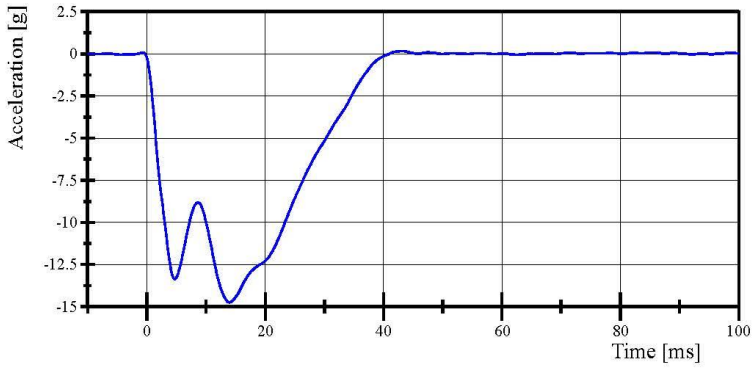
Condition: Used

Comments:
Left Arm S/N: DP8451
Shoulder Rib S/N: DO9814

Transportation Research Center Inc.

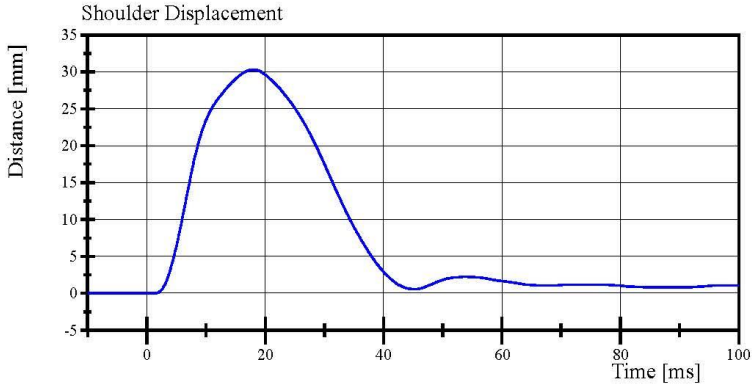
Left Lateral Shoulder
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Probe Acceleration



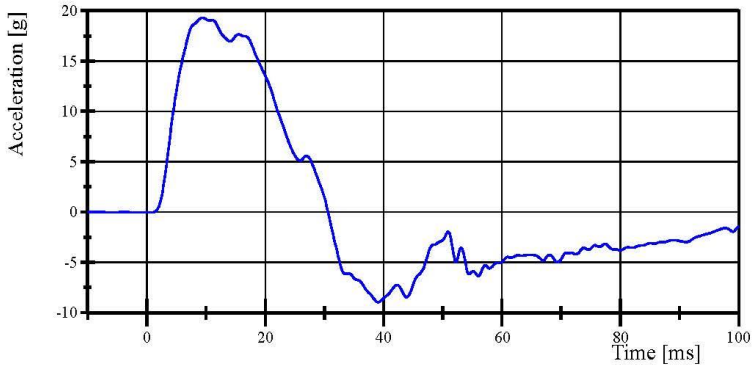
Filter Class: CFC_180
Max: 0.2 g at 43.2 ms
Min: -14.7 g at 14.0 ms

Shoulder Displacement



Filter Class: CFC_600
Max: 30.3 mm at 17.8 ms
Min: -0.0 mm at 1.4 ms

Upper Spine Acceleration (Y)



Filter Class: CFC_180
Max: 19.3 g at 9.4 ms
Min: -9.0 g at 39.0 ms

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

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Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.691 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.4 g	Yes
Shoulder Displacement	31 - 40 mm	34.9 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.0 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.6 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.9 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	38.5 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.5 g	Yes

Test meets specifications.

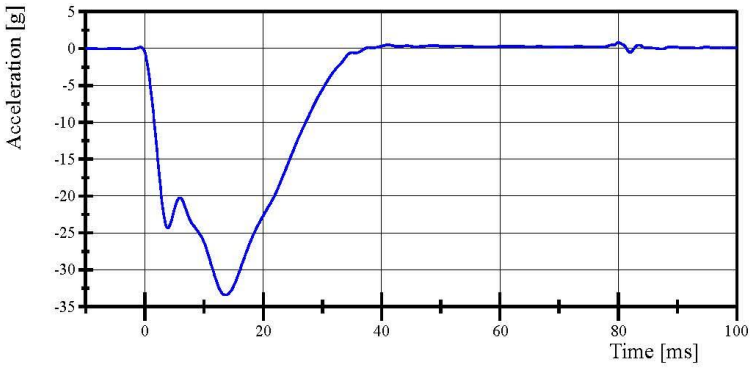
Condition: Used

Comments:
Left Arm S/N: DP8451
Shoulder Rib S/N: 180-3355 DO9814
Upper Thorax Rib S/N: 180-3362 DP6492
Middle Thorax Rib S/N: 180-3362 DP6493
Lower Thorax Rib S/N: 180-3362 DP7664

Transportation Research Center Inc.

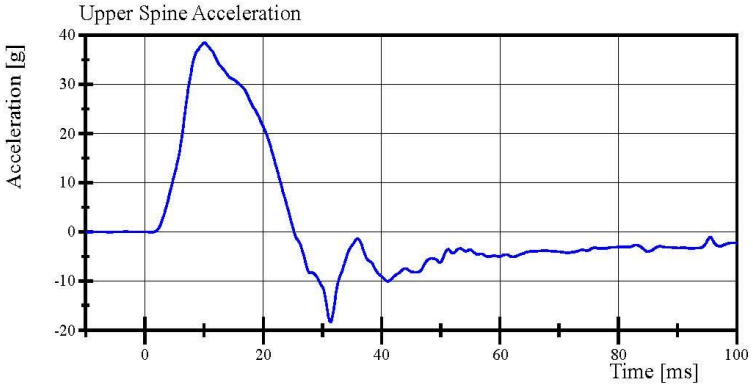
Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Probe Acceleration



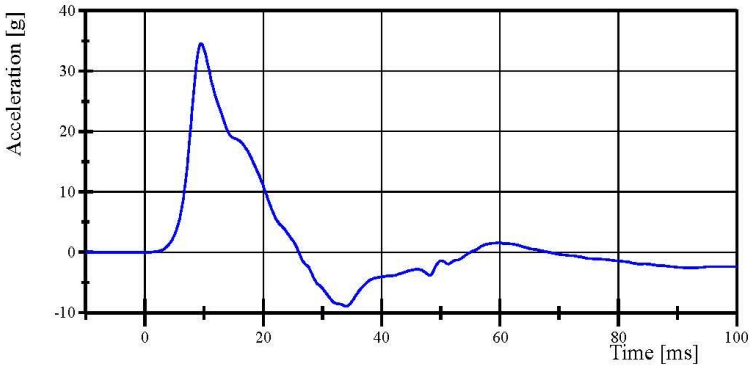
Filter Class: CFC_180
Max: 0.9 g at 80.0 ms
Min: -33.4 g at 13.6 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 38.5 g at 10.1 ms
Min: -18.3 g at 31.4 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 34.5 g at 9.5 ms
Min: -8.9 g at 34.0 ms

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

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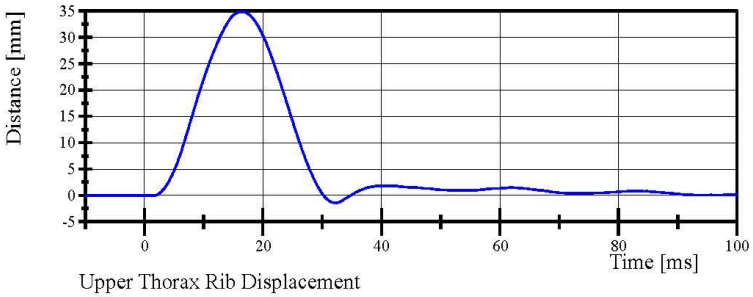
Transportation Research Center Inc.

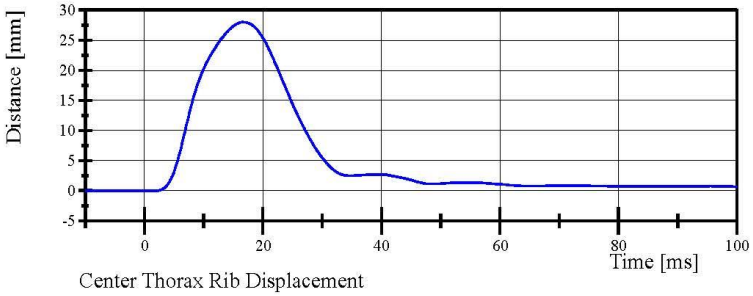
Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Shoulder Rib Displacement



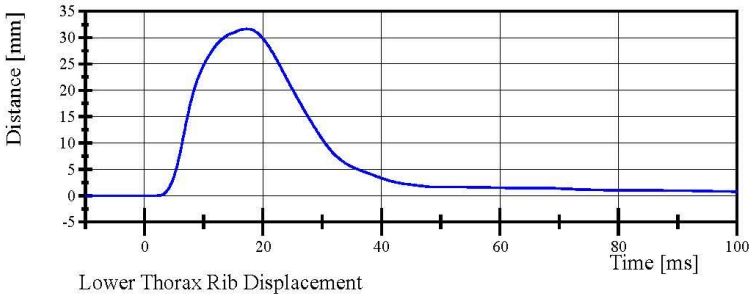
Filter Class: CFC_600
Max: 34.9 mm at 16.5 ms
Min: -1.4 mm at 32.2 ms

Upper Thorax Rib Displacement



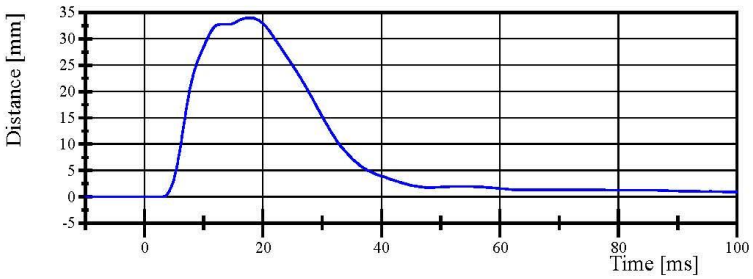
Filter Class: CFC_600
Max: 28.0 mm at 16.6 ms
Min: -0.0 mm at -0.3 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 31.6 mm at 17.2 ms
Min: -0.0 mm at -0.2 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 33.9 mm at 17.5 ms
Min: -0.0 mm at 2.9 ms

Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.331 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.9 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	39.2 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	42.1 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	36.1 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	15.0 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.6 g	Yes

Test meets specifications.

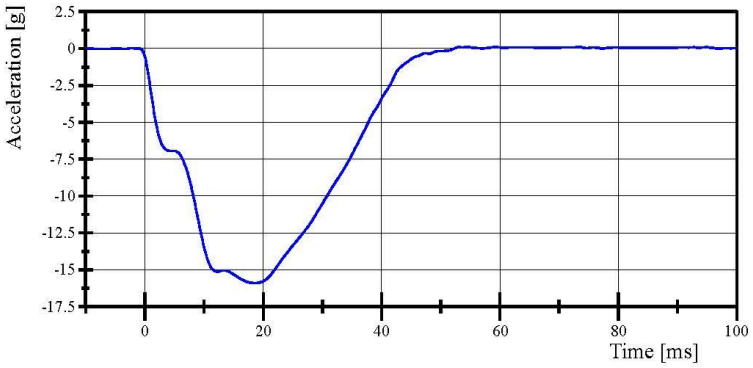
Condition: Used

Comments:
Upper Thorax Rib S/N: 180-3362 DP6492
Middle Thorax Rib S/N: 180-3362 DP6493
Lower Thorax Rib S/N: 180-3362 DP7664

Transportation Research Center Inc.

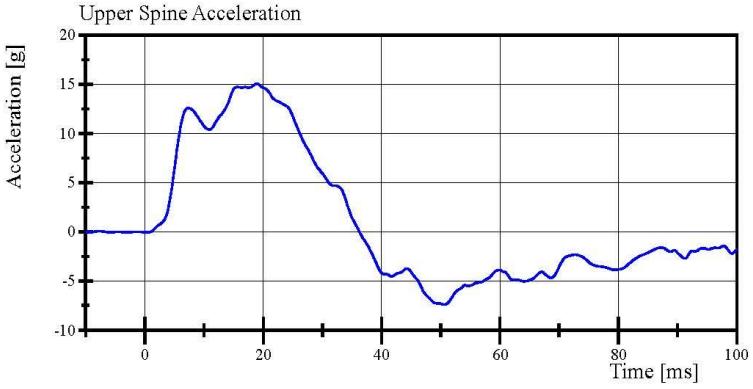
Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Probe Acceleration



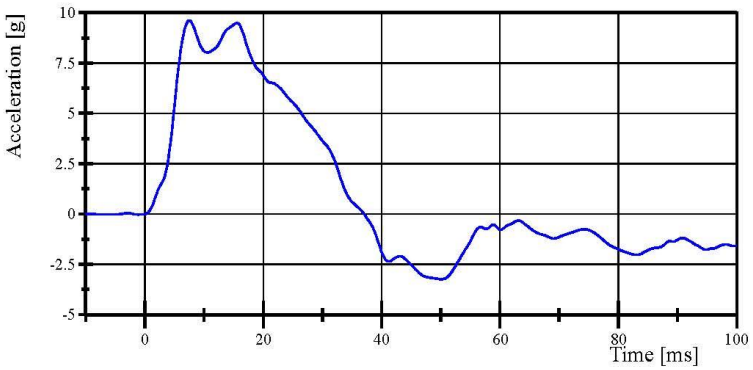
Filter Class: CFC_180
Max: 0.1 g at 73.4 ms
Min: -15.9 g at 18.6 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 15.0 g at 19.0 ms
Min: -7.4 g at 50.6 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 9.6 g at 7.5 ms
Min: -3.2 g at 50.1 ms

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

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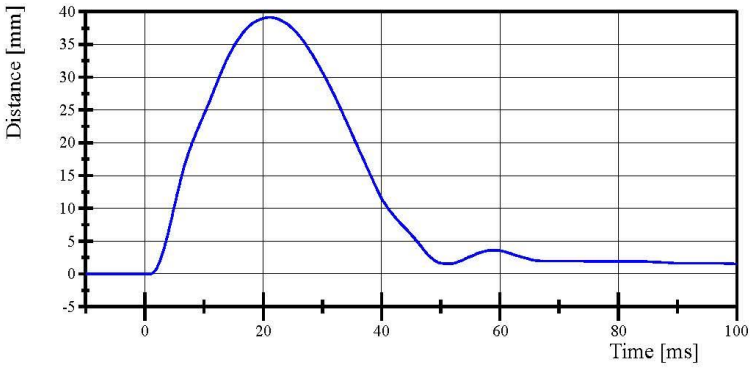
Transportation Research Center Inc.

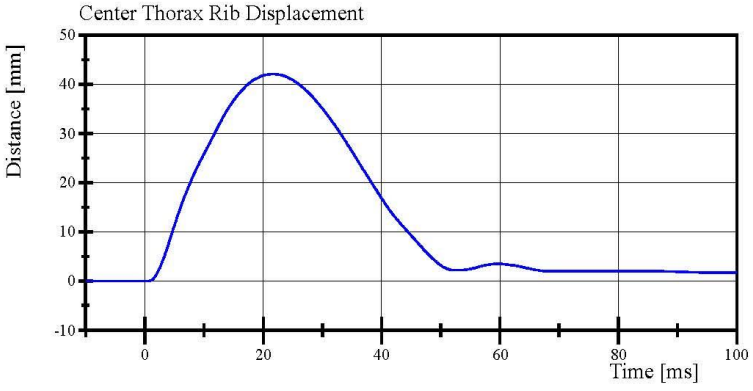
Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Upper Thorax Rib Displacement



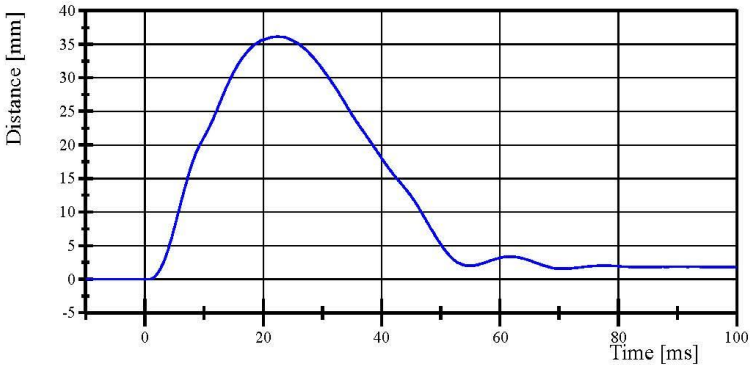
Filter Class: CFC_600
Max: 39.2 mm at 21.1 ms
Min: -0.0 mm at 0.8 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 42.1 mm at 21.6 ms
Min: -0.0 mm at -9.2 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 36.1 mm at 22.4 ms
Min: -0.0 mm at -8.0 ms

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

03.07.2022 10:08:11 861

Transportation Research Center Inc.

Left Lateral Abdomen
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.6 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	42.0 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	36.9 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.81 g	Yes

Test meets specifications.

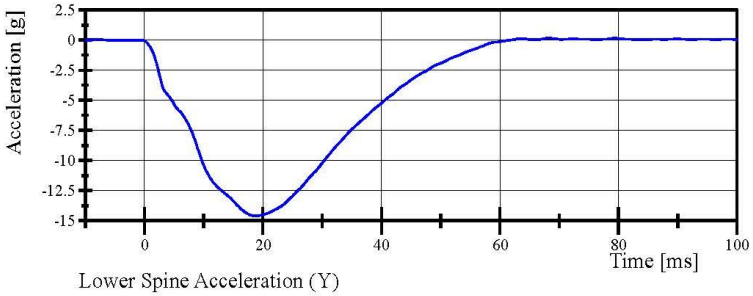
Condition: Used

Comments:
Upper Abdominal Rib S/N: 180-3368 DP5142
Lower Abdominal Rib S/N: 180-3368 DP5143

Transportation Research Center Inc.

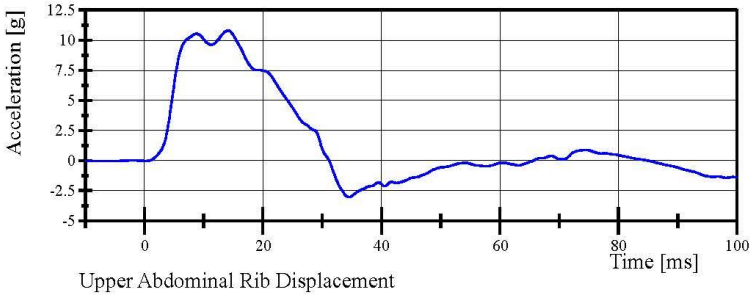
Left Lateral Abdomen
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Probe Acceleration



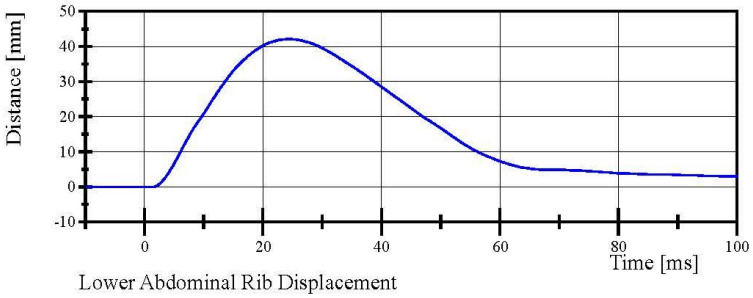
Filter Class: CFC_180
Max: 0.2 g at 68.2 ms
Min: -14.6 g at 18.6 ms

Lower Spine Acceleration (Y)



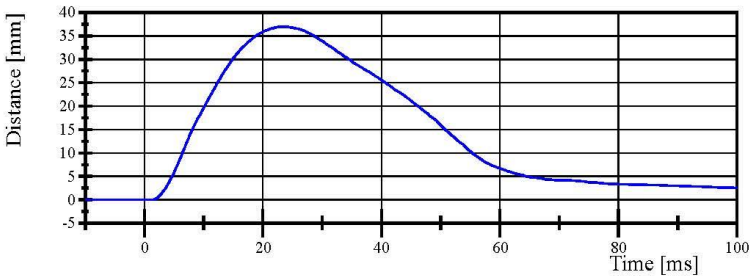
Filter Class: CFC_180
Max: 10.8 g at 14.1 ms
Min: -3.0 g at 34.5 ms

Upper Abdominal Rib Displacement



Filter Class: CFC_600
Max: 42.0 mm at 24.3 ms
Min: -0.0 mm at 1.4 ms

Lower Abdominal Rib Displacement



Filter Class: CFC_600
Max: 36.9 mm at 23.2 ms
Min: -0.0 mm at -0.4 ms

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

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Transportation Research Center Inc.

Left Lateral Pelvis
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.61 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-46.01 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	41.9 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,950.6 N	Yes

Test meets specifications.

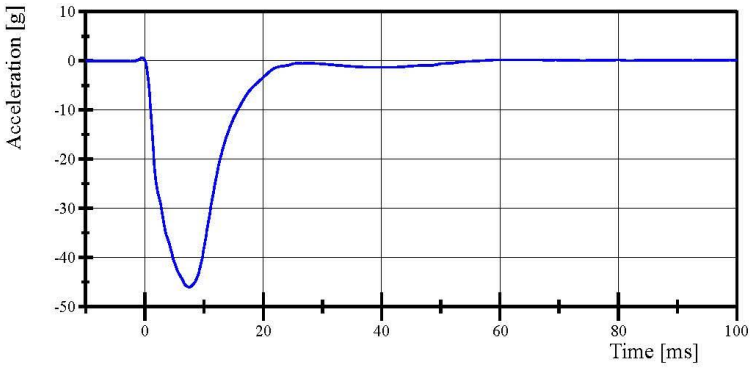
Condition: Used

Comments:
Pelvis Skin S/N: EN1613
Pelvis Plug Info:
Manufacturer: SACO
S/N: 13719
Cal Date: 20200206

Transportation Research Center Inc.

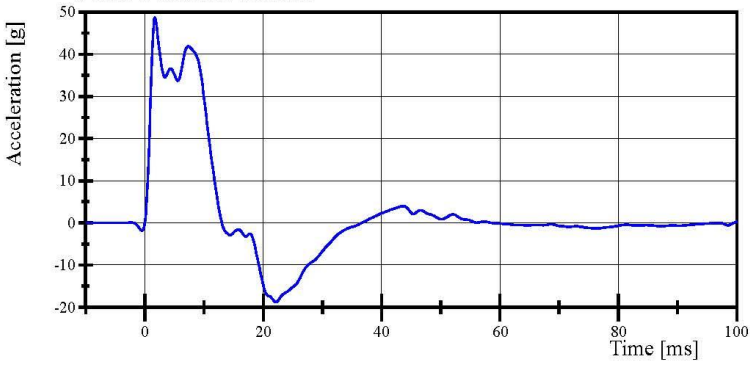
Left Lateral Pelvis
SID IIs Serial No. DQ0570 Certification No. 10-2
Test Date: 3/7/2022

Probe Acceleration



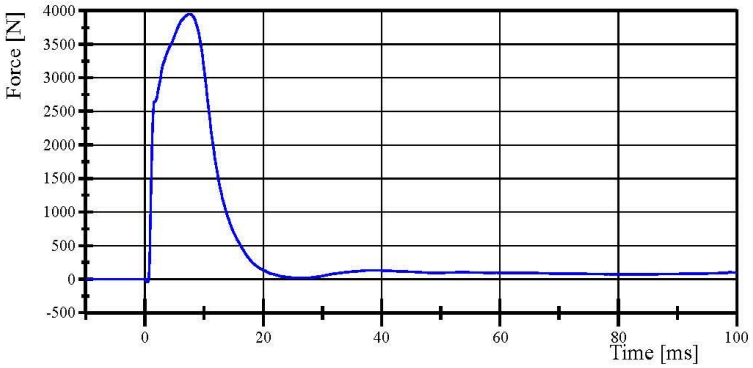
Filter Class: CFC_180
Max: 0.6 g at -0.4 ms
Min: -46.0 g at 7.5 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 48.6 g at 1.7 ms
Min: -18.8 g at 22.2 ms

Acetabulum Y-Axis Force



Filter Class: CFC_600
Max: 3,950.6 N at 7.5 ms
Min: -44.5 N at 0.5 ms

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

03.07.2022 14:47:45 441

Transportation Research Center Inc.

Left Lateral Iliac
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-37.7 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	30.8 g	Yes
Iliac Force	4,100 - 5,100 N	4,279.0 N	Yes

Test meets specifications.

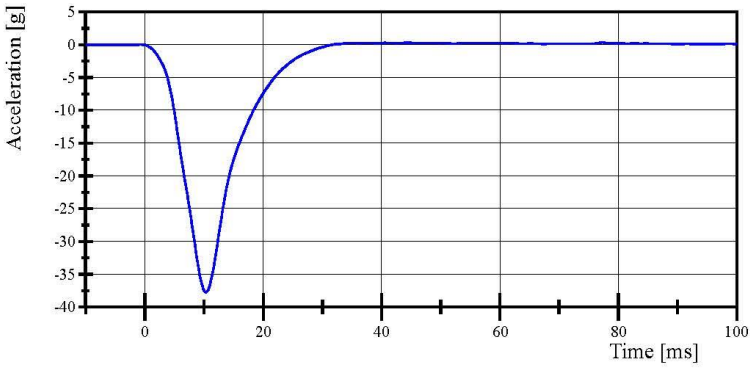
Condition: Used

Comments:
Pelvis Skin S/N: EN1613

Transportation Research Center Inc.

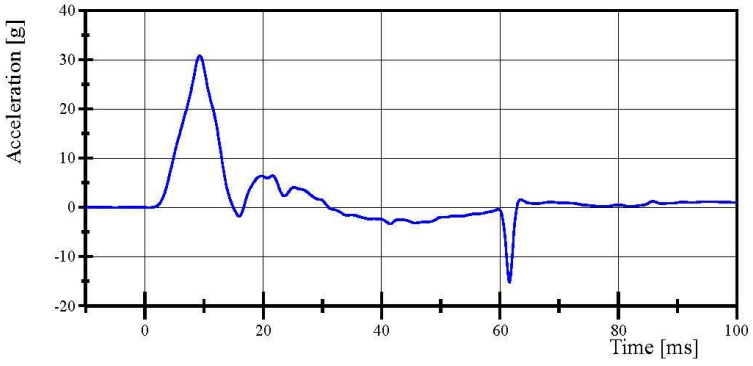
Left Lateral Iliac
SID IIs Serial No. DQ0570 Certification No. 10-1
Test Date: 3/7/2022

Probe Acceleration



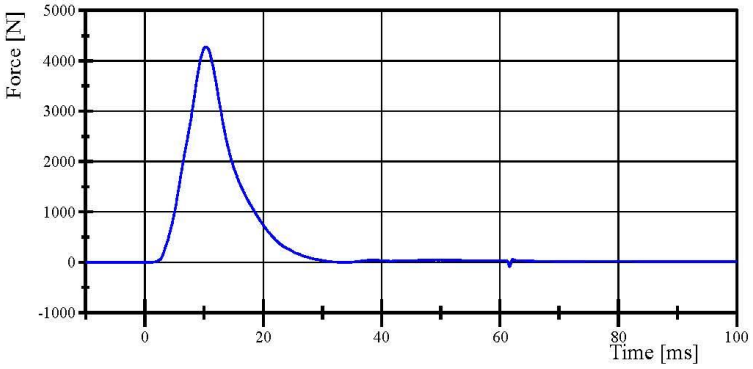
Filter Class: CFC_180
Max: 0.3 g at 77.3 ms
Min: -37.7 g at 10.3 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 30.8 g at 9.3 ms
Min: -15.3 g at 61.6 ms

Iliac Y-Axis Force



Filter Class: CFC_600
Max: 4,279.0 N at 10.3 ms
Min: -88.5 N at 61.7 ms

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

03.11.2022 07:55:15 649

Post-Test Calibration Sheets
Passenger S/N DQ0570

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DQ0570 Calibration No. 11

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

Transportation Research Center Inc.

Left Lateral Head Drop
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	131.3 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-5.3 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	< 15 %	1.32 %	Yes

Test meets specifications.

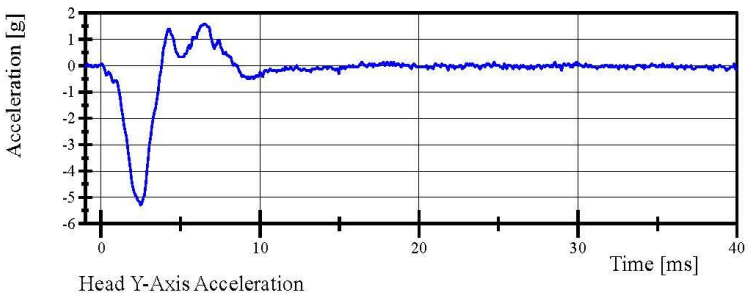
Condition: Used

Comments:
Head Skin S/N: DP6812

Transportation Research Center Inc.

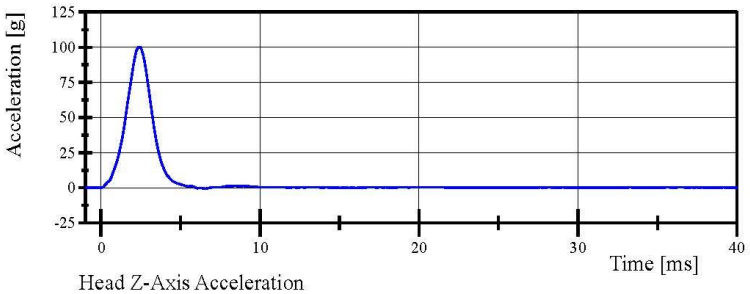
Left Lateral Head Drop
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Head X-Axis Acceleration



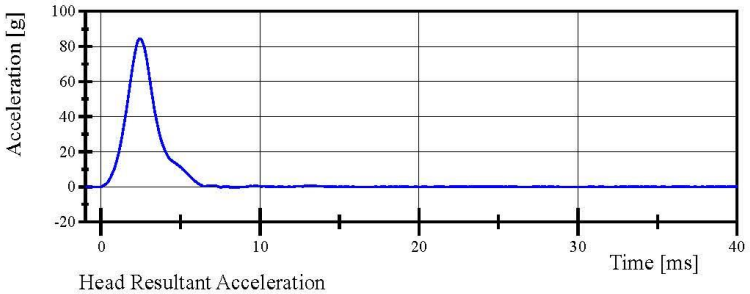
Filter Class: CFC_1000
Max: 1.6 g at 6.5 ms
Min: -5.3 g at 2.5 ms

Head Y-Axis Acceleration



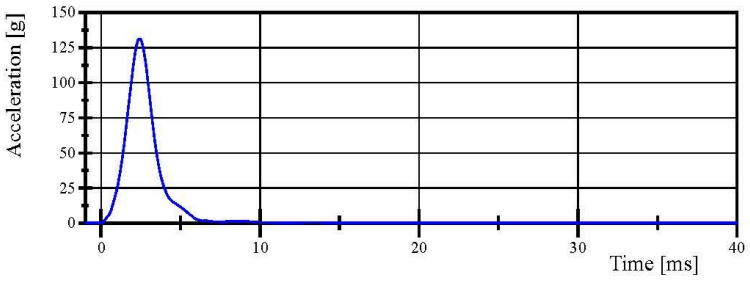
Filter Class: CFC_1000
Max: 100.4 g at 2.4 ms
Min: -0.6 g at 6.6 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 84.5 g at 2.5 ms
Min: -0.3 g at 7.5 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 131.3 g at 2.4 ms
Min: 0.0 g at -1.0 ms

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

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Transportation Research Center Inc.

Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.614 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	2.20 - 2.80 m/s	2.511 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.640 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.848 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.787 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.847 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-75.6 deg	Yes
Time of Peak	50 - 70 ms	65.1 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	40.7 N·m	Yes
Total Neck Occipital Condyles Moment Decay Time to 0 N·m	102 - 126 ms	111.7 ms	Yes

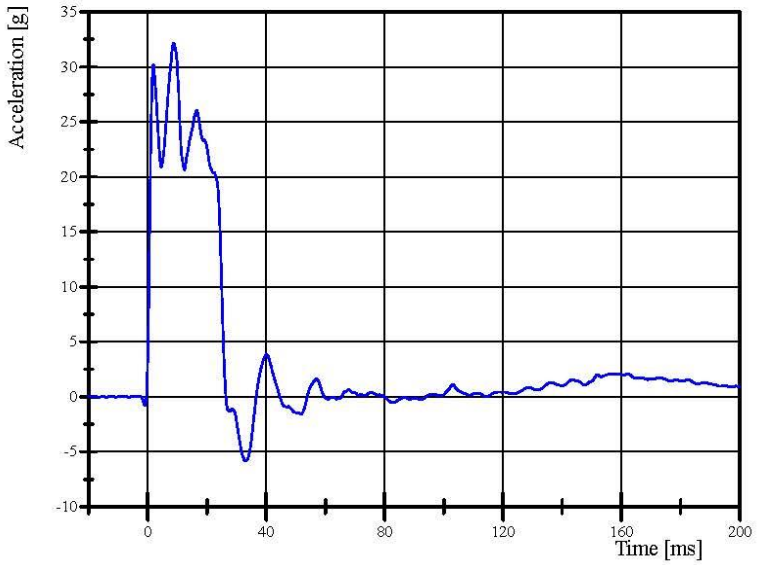
Test meets specifications.

Condition: Used
Comments:
Neck S/N: 717

Transportation Research Center Inc.

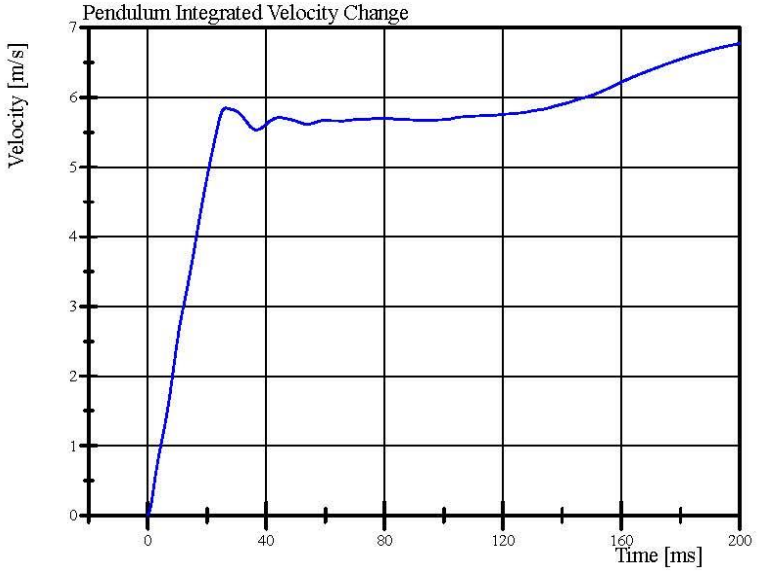
Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Pendulum Acceleration



Filter Class: CFC_180
Max: 32.1 g at 8.7 ms
Min: -5.9 g at 32.8 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 6.8 m/s at 200.0 ms
Min: 0.0 m/s at 0.0 ms

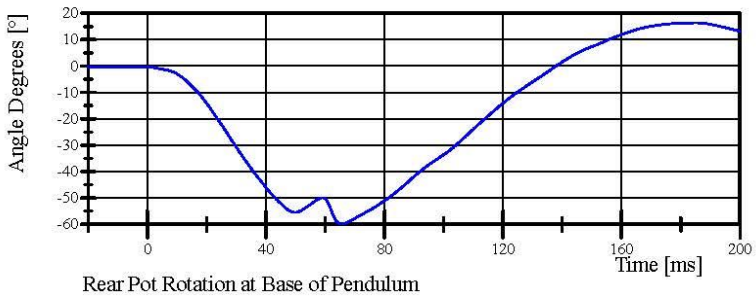
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

03.21.2022 14:50:22 752

Transportation Research Center Inc.

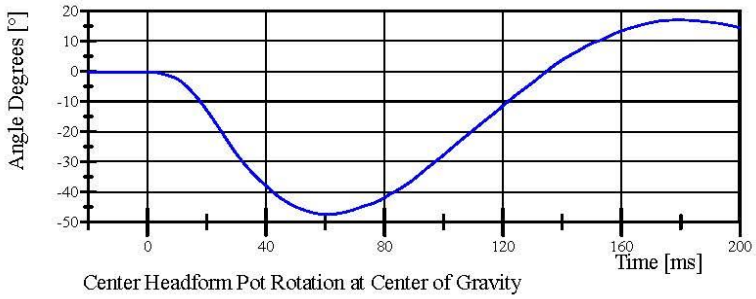
Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Forward Pot Rotation at Base of Pendulum



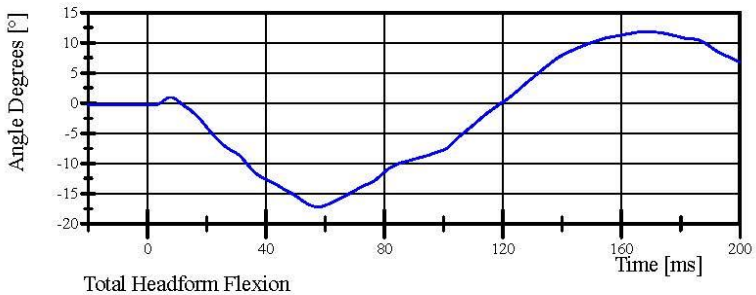
Filter Class: CFC_60
Max: 16.4 ° at 185.1 ms
Min: -59.8 ° at 65.5 ms

Rear Pot Rotation at Base of Pendulum



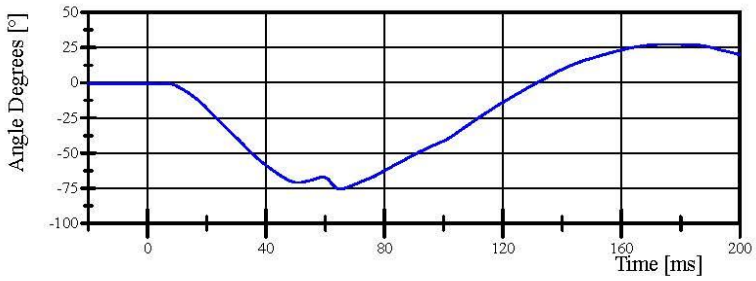
Filter Class: CFC_60
Max: 17.0 ° at 179.0 ms
Min: -47.5 ° at 60.8 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_60
Max: 11.8 ° at 168.2 ms
Min: -17.2 ° at 57.6 ms

Total Headform Flexion



Filter Class: CFC_60
Max: 27.4 ° at 176.0 ms
Min: -75.6 ° at 65.1 ms

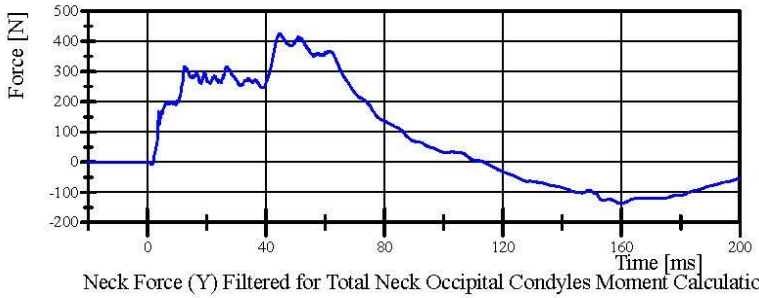
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

03.21.2022 14:50:23 752

Transportation Research Center Inc.

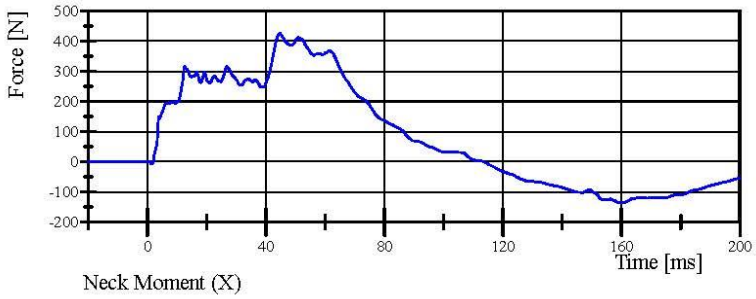
Left Lateral Neck
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Neck Force (Y)



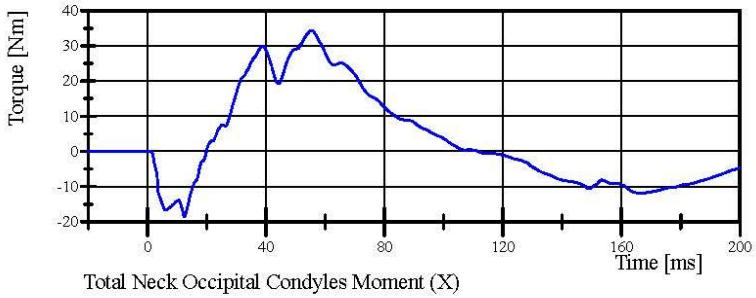
Filter Class: CFC_1000
Max: 426.9 N at 44.6 ms
Min: -136.5 N at 160.5 ms

Neck Force (Y) Filtered for Total Neck Occipital Condyles Moment Calculation



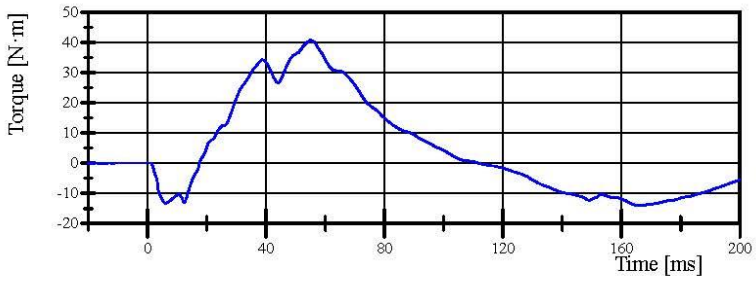
Filter Class: CFC_600
Max: 425.5 N at 44.6 ms
Min: -136.1 N at 159.8 ms

Neck Moment (X)



Filter Class: CFC_600
Max: 34.3 Nm at 55.2 ms
Min: -18.6 Nm at 12.5 ms

Total Neck Occipital Condyles Moment (X)



Filter Class: Without_(Constar
Max: 40.7 N·m at 55.1 ms
Min: -14.0 N·m at 167.0 ms

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

03.21.2022 14:50:23 752

Transportation Research Center Inc.

Left Lateral Shoulder
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.34 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.1 g	Yes
Shoulder Displacement	28 - 37 mm	31.7 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.4 g	Yes

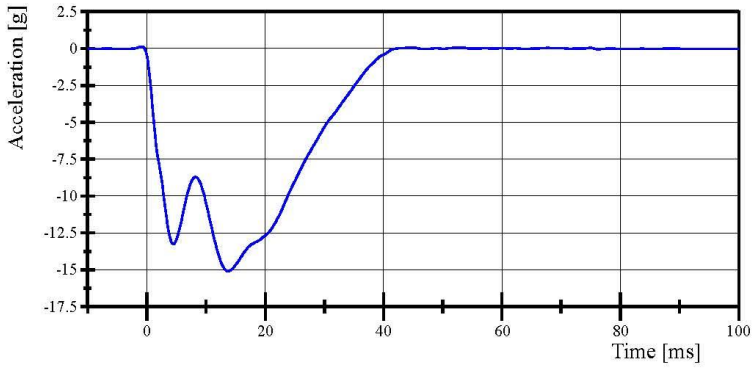
Test meets specifications.

Condition: Used
Comments:
Left Arm S/N: DP8451
Shoulder Rib S/N: DO9814

Transportation Research Center Inc.

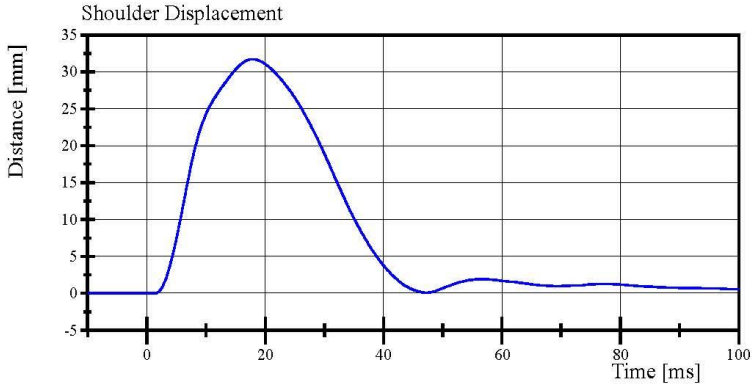
Left Lateral Shoulder
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Probe Acceleration



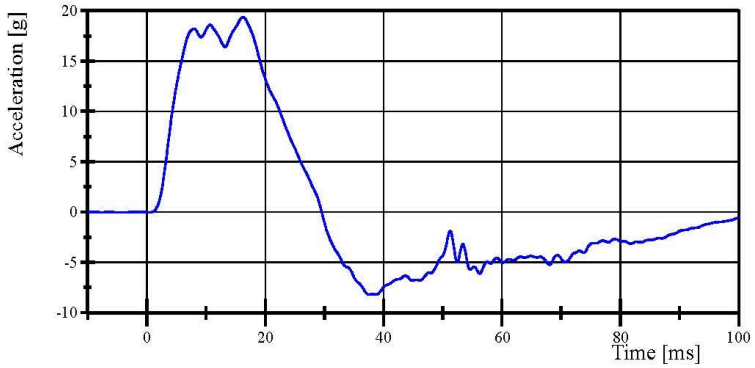
Filter Class: CFC_180
Max: 0.1 g at -0.8 ms
Min: -15.1 g at 13.7 ms

Shoulder Displacement



Filter Class: CFC_600
Max: 31.7 mm at 17.9 ms
Min: -0.0 mm at 1.3 ms

Upper Spine Acceleration (Y)



Filter Class: CFC_180
Max: 19.4 g at 16.2 ms
Min: -8.2 g at 37.5 ms

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

03.18.2022 11:02:13 874

Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.687 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-34.2 g	Yes
Shoulder Displacement	31 - 40 mm	36.4 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.4 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.2 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	32.8 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.7 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.8 g	Yes

Test meets specifications.

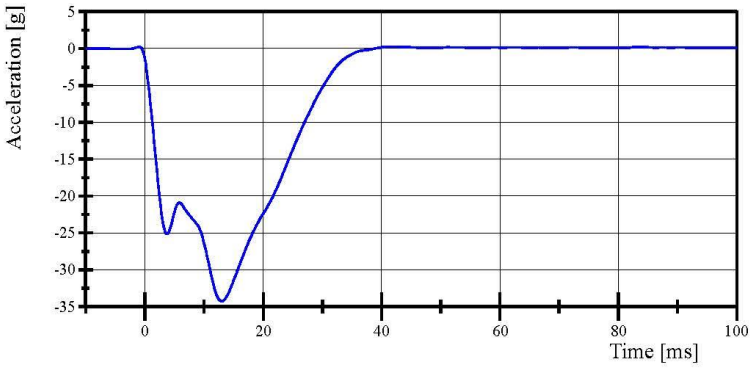
Condition: Used

Comments:
Left Arm S/N: DP8451
Shoulder Rib S/N: 180-3355 DO9814
Upper Thorax Rib S/N: 180-3362 DP6492
Middle Thorax Rib S/N: 180-3362 DP6493
Lower Thorax Rib S/N: 180-3362 DP7664

Transportation Research Center Inc.

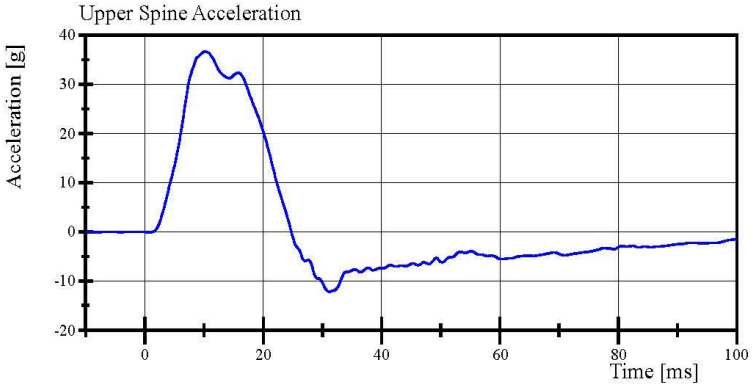
Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Probe Acceleration



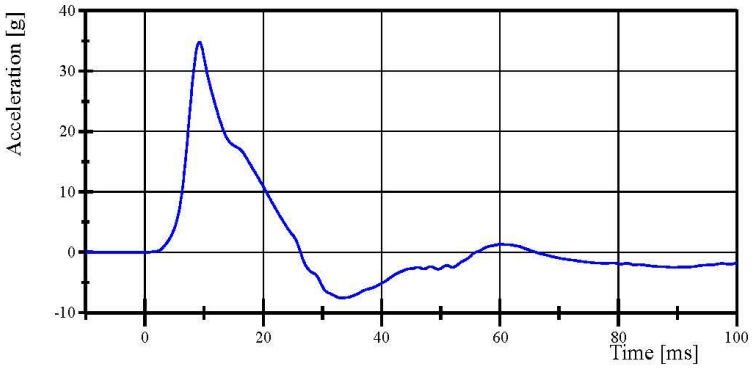
Filter Class: CFC_180
Max: 0.3 g at 41.4 ms
Min: -34.2 g at 13.0 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 36.7 g at 10.2 ms
Min: -12.2 g at 31.1 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 34.8 g at 9.2 ms
Min: -7.6 g at 33.1 ms

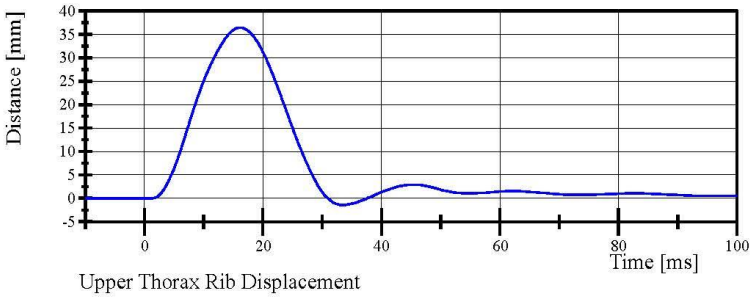
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

03.18.2022 11:58:15 643

Transportation Research Center Inc.

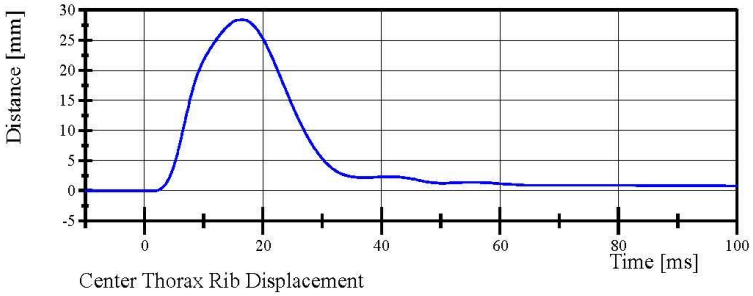
Left Lateral Thorax with Arm
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Shoulder Rib Displacement



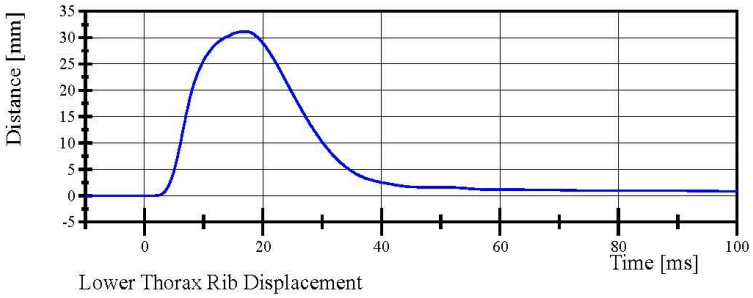
Filter Class: CFC_600
Max: 36.4 mm at 16.2 ms
Min: -1.4 mm at 33.4 ms

Upper Thorax Rib Displacement



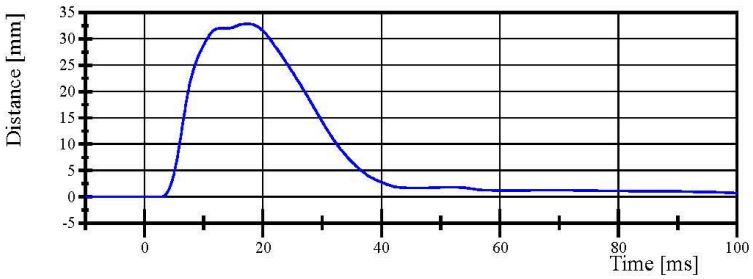
Filter Class: CFC_600
Max: 28.4 mm at 16.6 ms
Min: -0.0 mm at 1.3 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 31.2 mm at 17.1 ms
Min: -0.0 mm at 1.3 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 32.8 mm at 17.1 ms
Min: -0.0 mm at 2.8 ms

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

03.18.2022 11:58:16 643

Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.331 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.2 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	38.0 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	42.1 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	38.1 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	15.2 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	10.0 g	Yes

Test meets specifications.

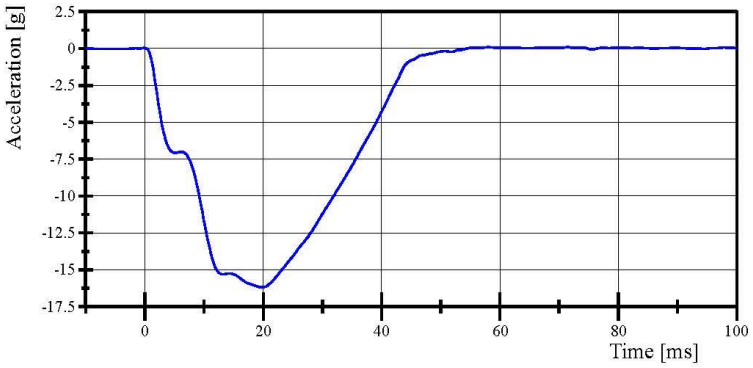
Condition: Used

Comments:
Upper Thorax Rib S/N: 180-3362 DP6492
Middle Thorax Rib S/N: 180-3362 DP6493
Lower Thorax Rib S/N: 180-3362 DP7664

Transportation Research Center Inc.

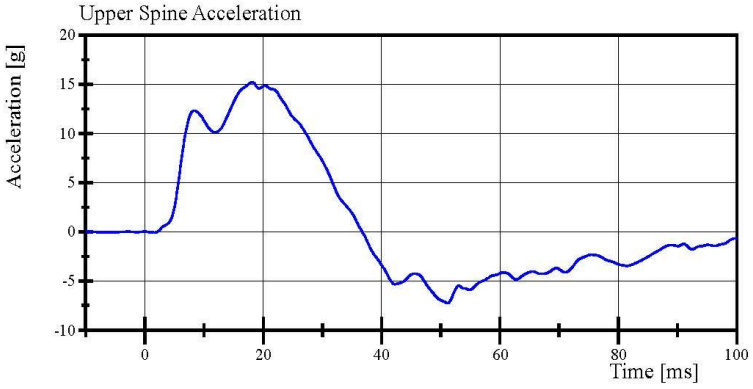
Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Probe Acceleration



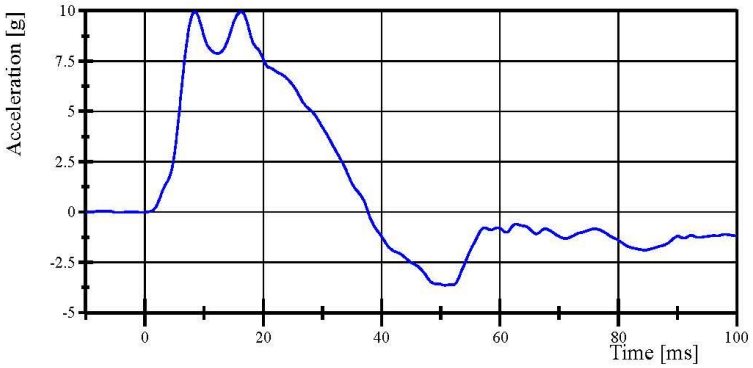
Filter Class: CFC_180
Max: 0.1 g at 58.1 ms
Min: -16.2 g at 19.8 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 15.2 g at 18.2 ms
Min: -7.3 g at 51.2 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 10.0 g at 16.2 ms
Min: -3.6 g at 50.6 ms

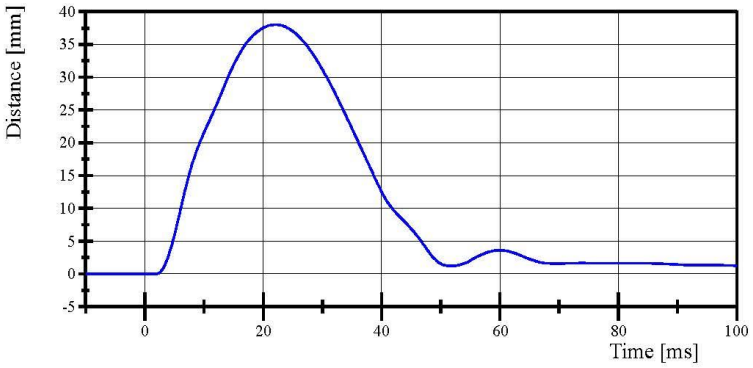
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

03.18.2022 11:24:29 864

Transportation Research Center Inc.

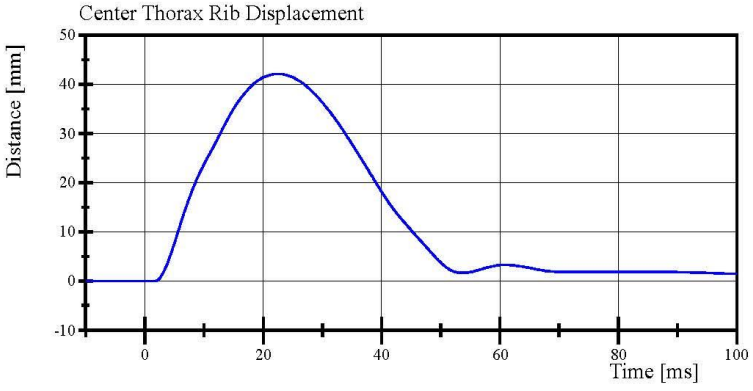
Left Lateral Thorax without Arm
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Upper Thorax Rib Displacement



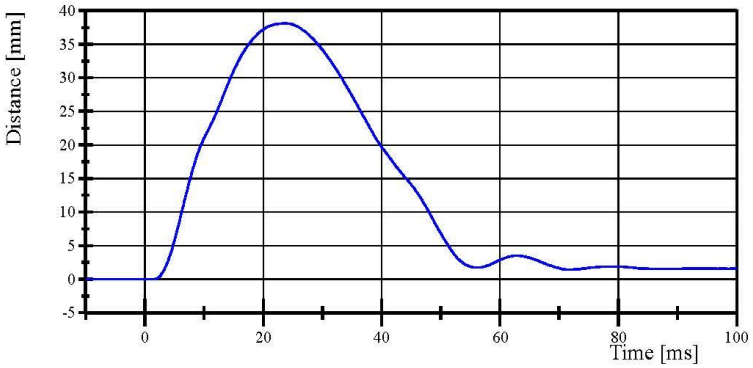
Filter Class: CFC_600
Max: 38.0 mm at 22.0 ms
Min: -0.0 mm at -5.0 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 42.1 mm at 22.5 ms
Min: -0.0 mm at -2.0 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 38.1 mm at 23.8 ms
Min: -0.0 mm at -5.0 ms

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

03.18.2022 11:24:29 864

Transportation Research Center Inc.

Left Lateral Abdomen
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.28 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.6 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	41.1 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	36.7 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.66 g	Yes

Test meets specifications.

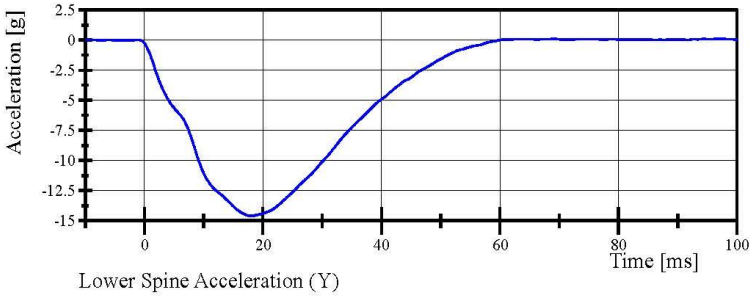
Condition: Used

Comments:
Upper Abdominal Rib S/N: 180-3368 DP5142
Lower Abdominal Rib S/N: 180-3368 DP5143

Transportation Research Center Inc.

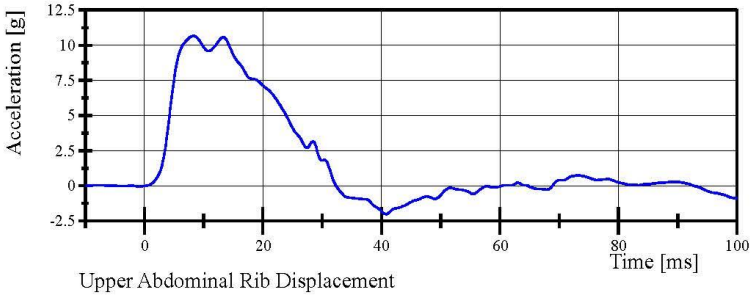
Left Lateral Abdomen
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Probe Acceleration



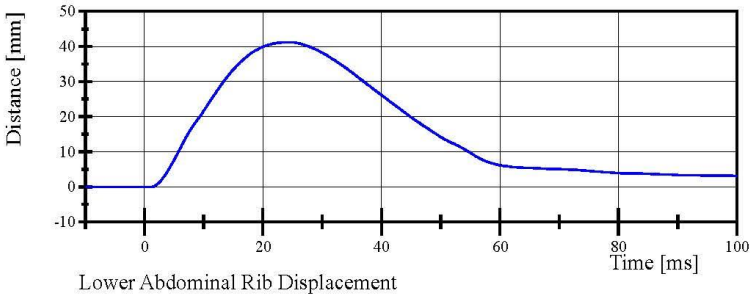
Filter Class: CFC_180
Max: 0.1 g at 97.2 ms
Min: -14.6 g at 18.0 ms

Lower Spine Acceleration (Y)



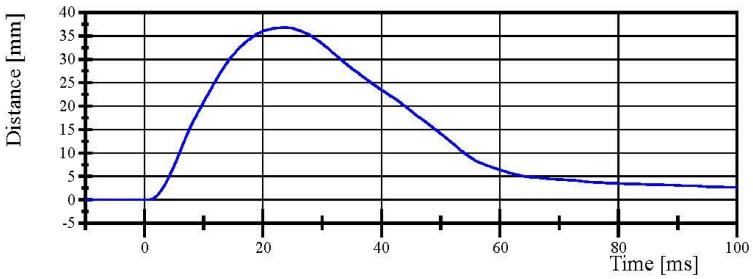
Filter Class: CFC_180
Max: 10.7 g at 8.2 ms
Min: -2.0 g at 40.8 ms

Upper Abdominal Rib Displacement



Filter Class: CFC_600
Max: 41.1 mm at 23.9 ms
Min: -0.0 mm at 1.0 ms

Lower Abdominal Rib Displacement



Filter Class: CFC_600
Max: 36.7 mm at 23.5 ms
Min: -0.0 mm at -0.4 ms

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

03.18.2022 11:12:53 714

Transportation Research Center Inc.

Left Lateral Pelvis
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.62 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-45.95 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	42.2 g	No
Acetabulum Force	3,600 - 4,300 N	3,942.6 N	Yes

Test does not meet specifications.

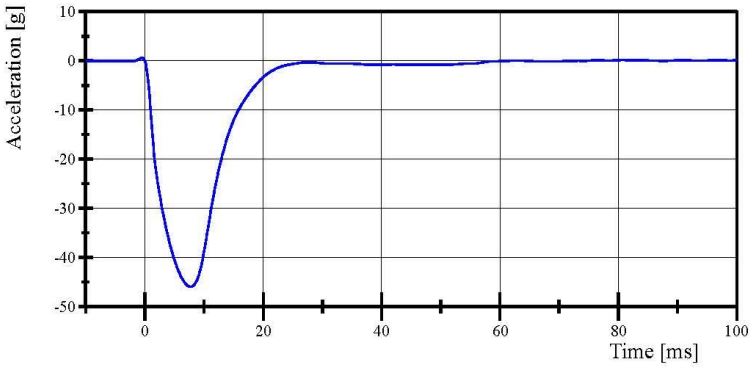
Condition: Used

Comments:
Pelvis Skin S/N: EN1613
Pelvis Plug Info:
Manufacturer: SACO
S/N: 13728
Cal Date: 20200206

Transportation Research Center Inc.

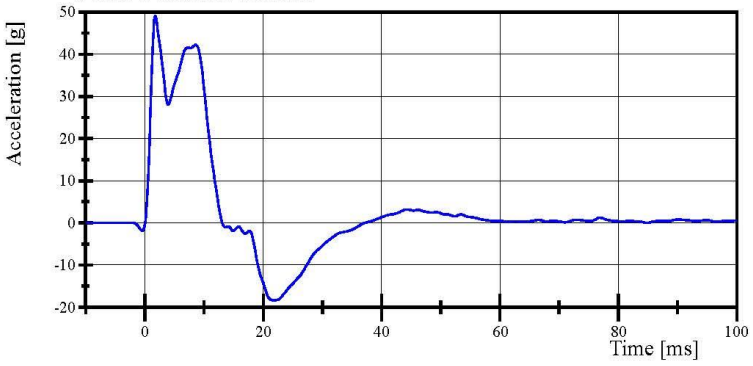
Left Lateral Pelvis
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Probe Acceleration



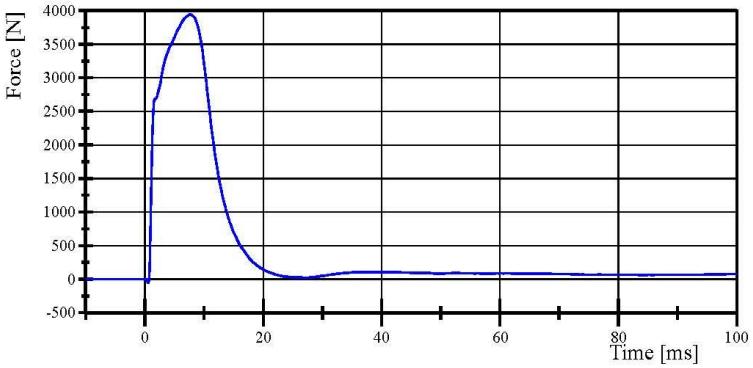
Filter Class: CFC_180
Max: 0.6 g at -0.5 ms
Min: -46.0 g at 7.7 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 49.0 g at 1.8 ms
Min: -18.3 g at 22.0 ms

Acetabulum Y-Axis Force



Filter Class: CFC_600
Max: 3,942.6 N at 7.7 ms
Min: -53.9 N at 0.6 ms

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

03.18.2022 13:00:13 460

Transportation Research Center Inc.

Left Lateral Iliac
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-37.3 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	30.9 g	Yes
Iliac Force	4,100 - 5,100 N	4,141.9 N	Yes

Test meets specifications.

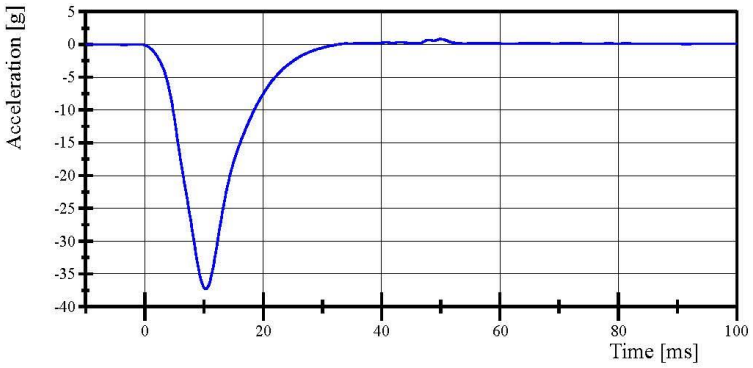
Condition: Used

Comments:
Pelvis Skin S/N: EN1613

Transportation Research Center Inc.

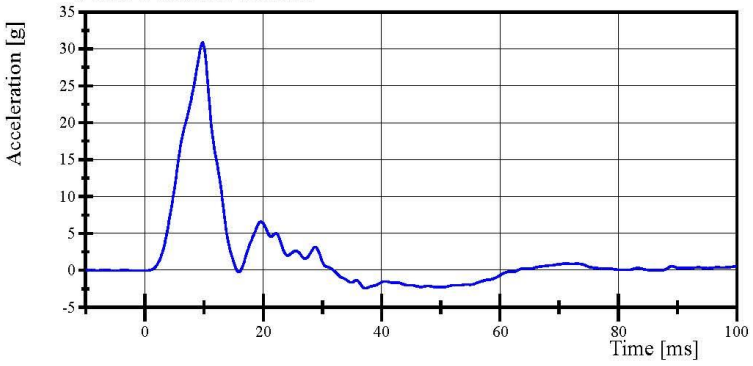
Left Lateral Iliac
SID IIs Serial No. DQ0570 Certification No. 11-1
Test Date: 3/18/2022

Probe Acceleration



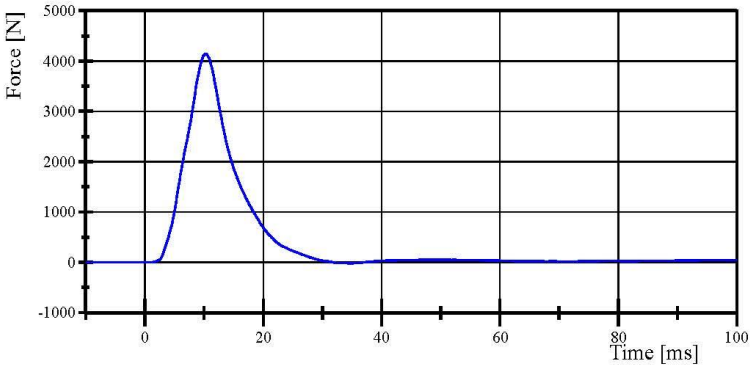
Filter Class: CFC_180
Max: 0.8 g at 49.8 ms
Min: -37.3 g at 10.3 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 30.9 g at 9.8 ms
Min: -2.4 g at 37.3 ms

Iliac Y-Axis Force



Filter Class: CFC_600
Max: 4,141.9 N at 10.2 ms
Min: -19.9 N at 34.7 ms

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

03.18.2022 10:48:48 691

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N F030		
			Serial Number	**Manufacturer**	**Calibration Date**
Head Accelerometers		X	P87680	Endevco	1-Mar-2022
		Y	T10352	Endevco	2-Mar-2022
		Z	P91950	Endevco	1-Mar-2022
Redundant Head Accelerometers		X	T16771	Endevco	1-Mar-2022
		Y	P83368	Endevco	2-Mar-2022
		Z	P91904	Endevco	1-Mar-2022
Thoracic Rib Displacement Potentiometers	Upper	Y	111	Honeywell	1-Mar-2022
	Middle	Y	174	FTSS	1-Mar-2022
	Lower	Y	0913	Honeywell	1-Mar-2022
Abdomen Load Cells	Front	Y	1441	Denton	1-Mar-2022
	Middle	Y	1436	Denton	1-Mar-2022
	Rear	Y	1437	Denton	1-Mar-2022
Lower Spine Accelerometers (T12)		X	T11866	Endevco	1-Mar-2022
		Y	P91615	Endevco	1-Mar-2022
		Z	P64884	Endevco	1-Mar-2022
Acetabulum Load Cell		Y	N/A	N/A	N/A
Pubic Symphysis Load Cell		Y	465-FY	Denton	1-Mar-2022

TABLE 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N DQ0570		
				Serial Number	**Manufacturer**	**Calibration Date**
Head Accelerometers			X	T11432	Endevco	3-Mar-2022
			Y	P93774	Endevco	3-Mar-2022
			Z	P91566	Endevco	3-Mar-2022
Redundant Head Accelerometers			X	T16785	Endevco	3-Mar-2022
			Y	P93762	Endevco	3-Mar-2022
			Z	P93761	Endevco	3-Mar-2022
Displacement Potentiometers	Shoulder		N/A	N/A	N/A	N/A
	Thoracic Rib	Upper	Y	007	Servo	4-Mar-2022
		Middle	Y	037	Servo	4-Mar-2022
		Lower	Y	048	Servo	4-Mar-2022
	Abdominal Rib	Upper	Y	1295	Servo	4-Mar-2022
		Lower	Y	1136	Servo	4-Mar-2022
Lower Spine Accelerometers (T12)			X	P94545	Endevco	4-Mar-2022
			Y	P94647	Endevco	3-Mar-2022
			Z	P94530	Endevco	3-Mar-2022
Acetabulum Load Cell			Y	DK7483S-FY	FTSS	3-Mar-2022
Iliac Wing Load Cell			Y	287-FY	Denton	3-Mar-2022
Pelvis Plug (struck side)				13729	SACO	6-Feb-2020
Pelvis Plug (non-struck side)				13746	SACO	25-Mar-2020

TABLE 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	P58549	Endevco	26-Jan-2022
	Vehicle Center of Gravity	Y	P24564	Endevco	3-Mar-2022
	Vehicle Center of Gravity	Z	T16764	Endevco	26-Jan-2022
2	Right Sill at Front Seat	X	T25513	Endevco	7-Mar-2022
	Right Sill at Front Seat	Y	P87134	Endevco	3-Mar-2022
	Right Sill at Front Seat	Z	P61538	Endevco	14-Mar-2022
3	Right Sill at Rear Seat	X	P76454	Endevco	8-Mar-2022
	Right Sill at Rear Seat	Y	T11805	Endevco	7-Mar-2022
	Right Sill at Rear Seat	Z	P57946	Endevco	7-Mar-2022
4	Left Sill at Front Door	Y	P81630	Endevco	3-Mar-2022
5	Left Sill at Rear Door	Y	T11875	Endevco	8-Mar-2022
6	Left A-Post Lower	Y	P28760	Endevco	3-Mar-2022
7	Left A-Post Middle	Y	P97889	Endevco	3-Mar-2022
8	Left B-Post Lower	Y	T20648	Endevco	7-Mar-2022
9	B-Post Middle	Y	T23777	Endevco	8-Mar-2022
10	Front Seat Track	Y	P94498	Endevco	8-Mar-2022
11	Rear Seat Track or Structure	Y	T23885	Endevco	7-Mar-2022
12	Right Rear Occupant Compartment	Y	P73587	Endevco	3-Mar-2022
13	Engine Block	X	P83026	Endevco	8-Mar-2022
	Engine Block	Y	T23832	Endevco	8-Mar-2022
14	Rear Floorpan Above Axle	X	P91467	Endevco	7-Mar-2022
	Rear Floorpan Above Axle	Y	T11870	Endevco	26-Jan-2022
	Rear Floorpan Above Axle	Z	T11812	Endevco	26-Jan-2022

TABLE 4 – MDB Instrumentation

MDB Instrumentation		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A241177	Measurement Specialties	10-Dec-2021
MDB Center of Gravity	Y	A378389	Measurement Specialties	1-Nov-2021
MDB Center of Gravity	Z	A349801	Measurement Specialties	24-Nov-2021
Left Frame Rail at Rear Axle Centerline	X	A373614	Measurement Specialties	10-Dec-2021
Left Frame Rail at Rear Axle Centerline	Y	A377506	Measurement Specialties	9-Dec-2021