

Final Report Number: NCAP-TRC-18-004

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

**FORD MOTOR CO.
2018 Ford F-150 SuperCab
NHTSA Number: Q20180209**

**PREPARED BY:
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Report Date: May 11, 2018

FINAL REPORT

**Prepared For:
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
1200 New Jersey Ave, SE Room W43-410
Washington, DC 20590**

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Prepared By: ILO Project Operations Group

Approved By: John Shultz

Approval Date: May 11, 2018

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date _____

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

Date _____

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16. Abstract A 56.0 km/h NCAP Frontal Impact Test was conducted on a 2018 Ford F-150 SuperCab, in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and foot well intrusion performance. This test was conducted at the Transportation Research Center Inc. in East Liberty, Ohio on April 13, 2018. The impact velocity was 56.52 km/h, and the ambient temperature at the barrier face at the time of impact was 21.7° C. The target vehicle post-test maximum crush was 580 millimeters at vehicle centerline. The test vehicle's performance is as follows: <table border="1"> <thead> <tr> <th></th> <th colspan="3">Driver ATD</th> <th colspan="3">Passenger ATD</th> </tr> <tr> <th>Measurement Description</th> <th>Units</th> <th>Threshold</th> <th>Result</th> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td>NA</td> <td>700</td> <td>298</td> <td>NA</td> <td>700</td> <td>491</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>-24.3</td> <td>mm</td> <td>52</td> <td>-15.1</td> </tr> <tr> <td>3ms Chest Clip</td> <td>Gs</td> <td>60</td> <td>46.7</td> <td>Gs</td> <td>60</td> <td>48.6</td> </tr> <tr> <td>Nij</td> <td>NA</td> <td>1</td> <td>0.33</td> <td>NA</td> <td>1</td> <td>0.41</td> </tr> <tr> <td>Neck Tension</td> <td>Newtons</td> <td>4170</td> <td>1409.2</td> <td>Newtons</td> <td>2620</td> <td>733.7</td> </tr> <tr> <td>Neck Compression</td> <td>Newtons</td> <td>4000</td> <td>-410.4</td> <td>Newtons</td> <td>2520</td> <td>-488.9</td> </tr> <tr> <td>Left Femur Force</td> <td>Newtons</td> <td>10000</td> <td>-2467.1</td> <td>Newtons</td> <td>6800</td> <td>-939.1</td> </tr> <tr> <td>Right Femur Force</td> <td>Newtons</td> <td>10000</td> <td>-766.0</td> <td>Newtons</td> <td>6800</td> <td>-486.6</td> </tr> </tbody> </table>								Driver ATD			Passenger ATD			Measurement Description	Units	Threshold	Result	Units	Threshold	Result	Head Injury Criteria (HIC ₁₅)	NA	700	298	NA	700	491	Maximum Chest Compression	mm	63	-24.3	mm	52	-15.1	3ms Chest Clip	Gs	60	46.7	Gs	60	48.6	Nij	NA	1	0.33	NA	1	0.41	Neck Tension	Newtons	4170	1409.2	Newtons	2620	733.7	Neck Compression	Newtons	4000	-410.4	Newtons	2520	-488.9	Left Femur Force	Newtons	10000	-2467.1	Newtons	6800	-939.1	Right Femur Force	Newtons	10000	-766.0	Newtons	6800	-486.6
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1: PURPOSE AND SUMMARY OF THE TEST

PURPOSE

This 56 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-12-D-00257. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

This 56 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Front NCAP Laboratory Test Procedure dated October 2015.

SUMMARY

A 2018 Ford F-150 SuperCab impacted the barrier wall at a velocity of 56.52 km/h. The test was performed at Transportation Research Center, Inc. on April 13, 2018. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

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

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

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck load cells, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and the passenger's lap belts to measure dummy pelvic section loading.

The driver (position 1) ATD (Serial No. 037), and the right-front passenger (position 2) ATD (Serial No. 070) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 96 channels of data were recorded on an on-board data acquisition system. The 288 barrier channels of data were recorded on an off-board high resolution barrier data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

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

The maximum static crush of the vehicle was 580 mm and both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

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

The occupant data is summarized below:

ATD Position	HIC₁₅	Nij	Neck Tension (N)	Neck Compression (N)	3 ms Chest Clip (Gs)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)
Driver (50 th Male)	298	0.33	1409.2	-410.4	46.7	-24.3	-2467.1	-766.0
Passenger (5 th Female)	491	0.41	733.7	-488.9	48.6	-15.1	-939.1	-486.6

2: OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

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

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

TEST VEHICLE INFORMATION

NHTSA No.	Q20180209
Model Year	2018
Make	Ford
Model	F-150
Body Style	Truck
VIN	1FTFX1EG8JKC20767
Body Color	Ingot Silver
Odometer Reading (km/mi)	10.5 mi
Engine Displacement (L)	3.5
Type/No. Cylinders	V6
Engine Placement	Front Longitudinal
Transmission Type	Automatic
Transmission Speeds	10
Overdrive	Yes
Final Drive	AWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	Yes
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes
Automatic Door Locks (ADLs)	Yes

TEST VEHICLE OPTIONS

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

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured by	FORD MOTOR CO.	GVWR (kg)	3447 (7600 lbs)
Date of Manufacture	09/17	GAWR Front (kg)	1701 (3750 lbs)
		GAWR Rear (kg)	2064 (4550 lbs)

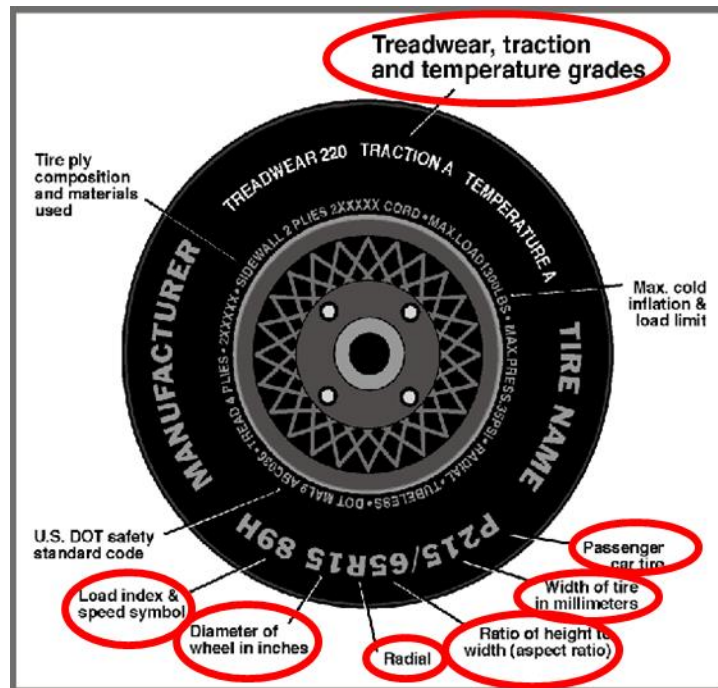
VEHICLE SEATING AND WEIGHT CAPACITY

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	N/A	
Number of Occupants	3	3	N/A	6
Capacity Wt. (VCW) (kg)				1059
Cargo Wt. (RCLW) (kg)				650.76

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

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	550	550
Cold / Test Pressure (kPa)	380	380
Recommended Tire Size	LT 245/70R17	LT 245/70R17
Tire Size on Vehicle	LT 245/70R17	LT 245/70R17
Tire Manufacturer	Goodyear	Goodyear
Tire Model	Wrangler	Wrangler
Treadwear	N/A	N/A
Traction Grade	N/A	N/A
Temperature Grade	N/A	N/A
Tire Plies Sidewall	2	2
Tire Plies Body	6	6
Load Index/Speed Symbol	119/116S	119/116S
Tire Material	Polyester, Polyamide. Steel	Polyester, Polyamide. Steel
DOT Safety Code Right	MOP8 A52V 3117	MOP8 A52V 3117
DOT Safety Code Left	MOP8 A52V 3117	MOP8 A52V 3117

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

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	719.4	488.0		757.6	568.2	
Right	kg	709.2	481.8		751.0	588.8	
Ratio	%	59.6	40.4		56.6	43.4	
Totals	kg	1428.6	969.8	2398.4	1508.6	1157.0	2665.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	2398.4
Weight of 1 P572E ATD & 1 P572O ATD	kg	139.3
Rated Cargo/Luggage Weight (RCLW) ¹	kg	136.0
Vehicle Target Weight (TVTW)	kg	2673.7

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front)
As Delivered	mm	943	942	1021	1027	1682
As Tested	mm	933	933	1008	997	1806
Post Test	mm	905	911	1002	1011	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	4160
Total Vehicle Length at Left Side	mm	6200
Total Vehicle Length at Centerline	mm	6370
Total Vehicle Length at Right Side	mm	6202
Weight of Ballast in Cargo Area	kg	57.6
Weight of Vehicle Components Removed	kg	0.0
Amount of Stoddard Solvent in Fuel Tank	liters	91.5

LIST OF COMPONENTS REMOVED TO MEET TEST WEIGHT: None

¹ Rated cargo and luggage weight limited to 136.0 kg or 300.0 lbs.

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

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018

TARGET VEHICLE STRUCTURAL MEASUREMENT

	Elements	Pre-Test (mm)
1	Total Length	6370
2	Total Width	2045
3	Bumper Top Height	630
4	Bumper Bottom Height	407
5	Longitudinal Member Top Height	562
6	Distance Between Longitudinal Members	760
7	Longitudinal Member Width	95
8	Engine Top Height	1164
9	Engine Bottom Height	388
10	Engine and Gearbox Width	660
11	Front Bumper-Engine Distance	800
12	Front Shock Absorber Fixing Height	845
13	Bonnet Leading Edge Height	1130
14	Front Shock Absorber Fixing Width	950
15	Front Bumper – Front Axle Distance	950
16	Front Axle – A-Pillar Distance	695
17	A-Pillar – B-Pillar Distance	1105
18	B-Pillar – Rear Axle Distance	2360
19	B-Pillar – C-Pillar Distance	748
20	Roof Sill Bottom Height	1750
21	Roof Sill Top Height	1833
22	Floor Sill Bottom Height	540
23	Floor Sill Top Height	583

DATA SHEET NO. 2

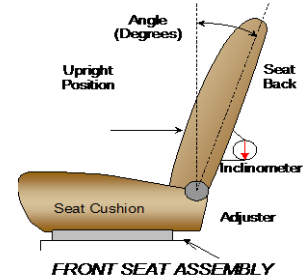
SEAT ADJUSTMENT, FUEL SYSTEM AND STEERING WHEEL DATA

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

NORMAL DESIGN RIDING POSITION

For adjustable driver and passenger seat back. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable. Inclinometer measurement at the top of the backrest at the seat centerline, according to Form 1 attachment.



	Degree
Driver Seat back angle:	3.2
Passenger Seat back angle:	0.7

SEAT FORE/AFT POSITIONS

Describe the method used of determining seat for/aft positions.

Driver: Mid position, Positioned according to Form 1

Passenger: Full forward, Positioned according to Form 1

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	38 notches; 255 mm	20
Passenger Seat	38 notches; 255 mm	1

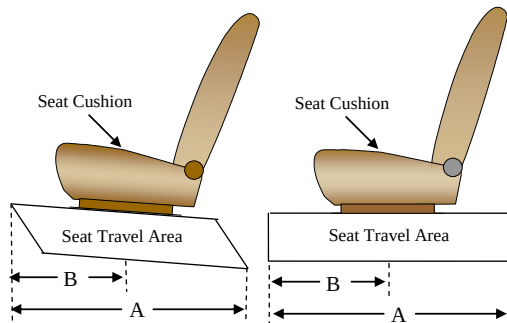
SEAT BELT UPPER ANCHORAGE

Describe the method of positioning seat belt upper anchorages.

Driver: Uppermost, Positioned according to Form 1

Passenger: Uppermost, Positioned according to Form 1.

	Total No. of Positions	Placed in Position No.
Driver Seat	4	2
Passenger Seat	4	1 (Uppermost)



DATA SHEET NO. 2 (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEM AND STEERING WHEEL DATA

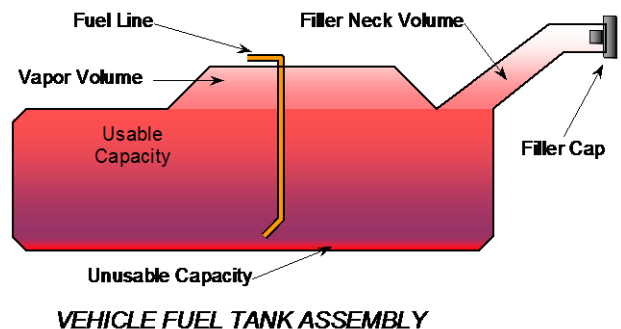
Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018

FUEL TANK CAPACITY

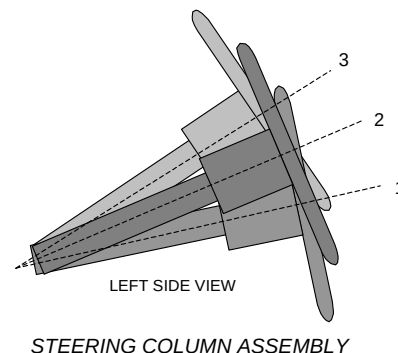
	Liters
Usable Capacity of "Standard Tank"	98.4
Usable Capacity of "Optional Tank"	136.3
92%-94% of Usable Capacity	91.5
Actual Amount of Solvent Used	91.5
1/3 of Usable Capacity	30.5

The electric fuel pump operates for 3 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 3 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls, the fuel pump deactivates. In addition, a fuel pump shut-off switch is provided, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.



STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. Steel square was placed across the rim of the steering wheel, an inclinometer was placed on the plate and the angle was measured. Telescope travel was measured full in and full out and set at the midpoint.



STEERING COLUMN POSITIONS

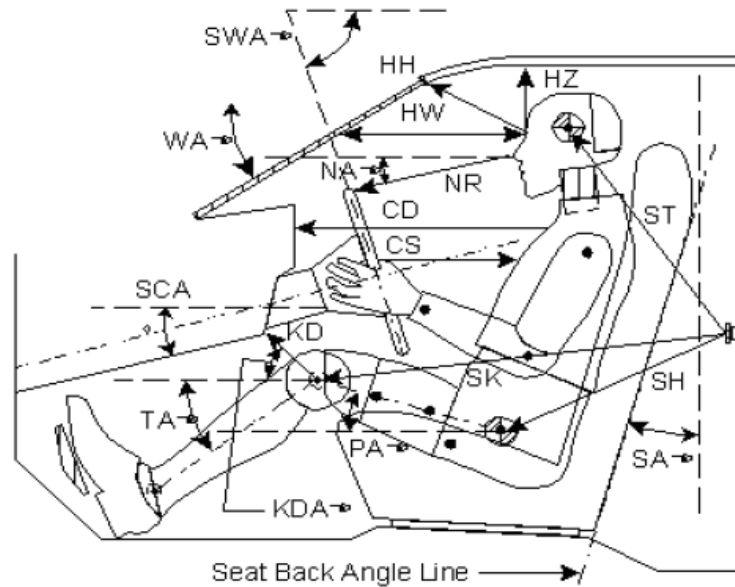
	Degrees	Fore/Aft Position (mm)
Lowermost Position No. 1	22.1	30
Geometric Center Position No. 2	23.8	51
Uppermost Position No. 3	25.5	72
Telescoping Steering Wheel Travel		42
Test Position	23.8	51

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018



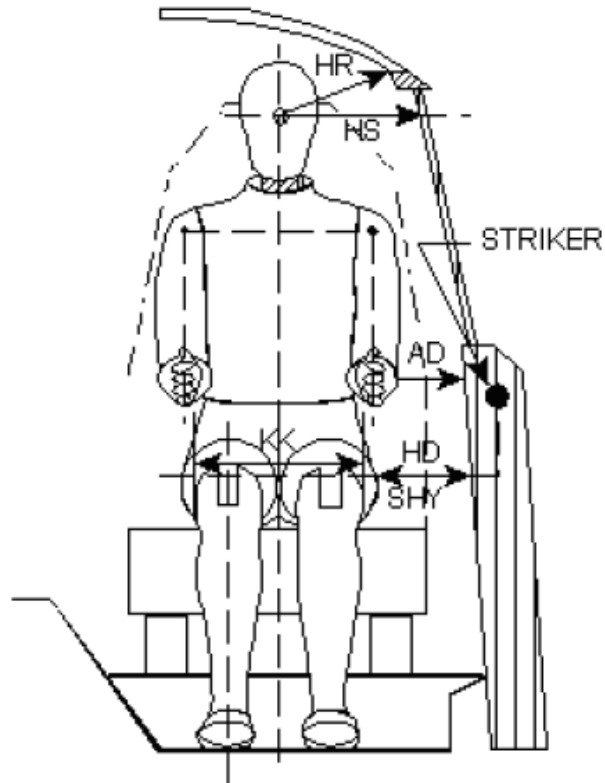
Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		34.2		
SWA°	Steering Wheel Angle		22.5		
SCA°	Steering Column Angle		67.5		
SA°	Seat Back Angle (on headrest post)		3.2		0.7
HZ	Head to Roof (Z)	252		321	
HH	Head to Header	501		423	
HW	Head to Windshield	757		713	
NR	Nose to Rim	441	7.2		
CD	Chest to Dash	621		455	
CS	Chest to Steering Hub	369			
RA	Rim to Abdomen	230			
KDL	Left Knee to Dash	180	20.6	82	26.6
KDR	Right Knee to Dash	168	20.9	89	26.5
PA°	Pelvic Angle		24.4		21.1
TA°	Tibia Angle		49.5		63.1
SK	Striker to Knee	691	-2.8	784	-2.4
ST	Striker to Head	616	-74.8	588	-59.6
SH	Striker to H-Point	299	13.6	451	8.0

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

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Test Date: 4/13/2018



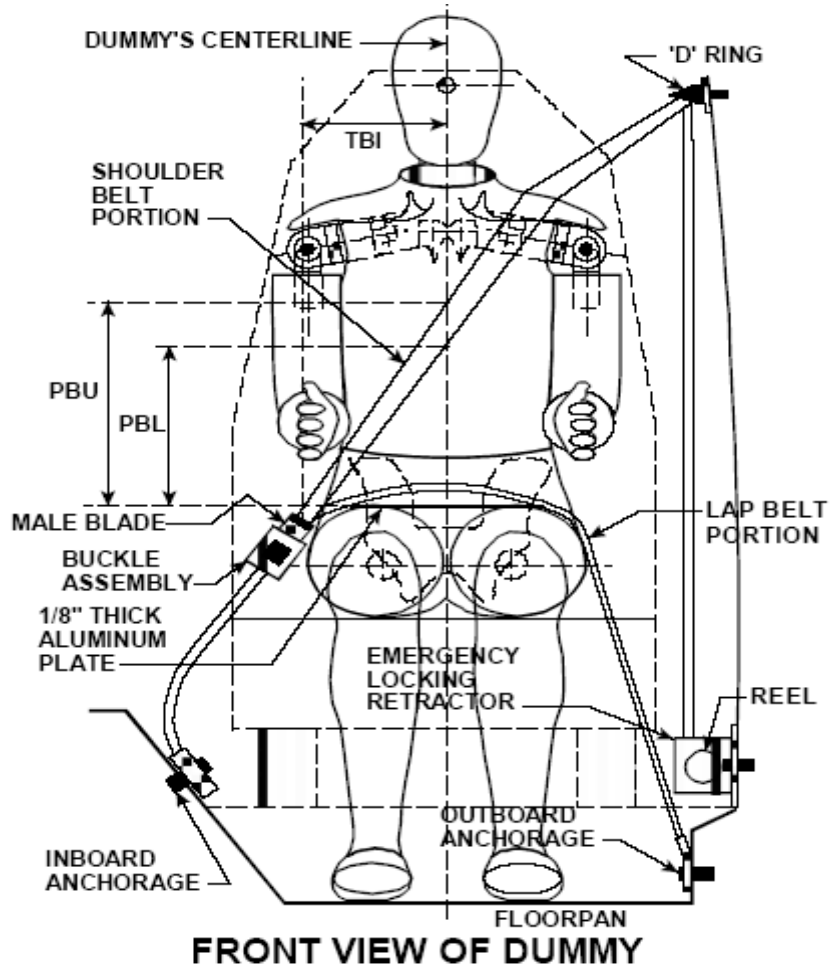
Code	Measurement Description	Driver	Passenger
AD	Arm to Door	129	97
HD	H-Point to Door	153	173
HR	Head to Side Header	231	292
HS	Head to Side Window	359	400
KK	Knee to Knee	339	170
SHY	Striker to H-Point (Y Direction)	268	281
AA	Ankle to Ankle	338	170

DATA SHEET NO. 5

SEAT BELT POSITIONING DATA

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
PBU – Top surface of reference to belt upper edge	mm	372	306
PBL – Top surface of reference to belt lower edge	mm	270	208

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Shoulder belt length as measured on ATD	mm	858	946
Lap belt length as measured on ATD	mm	720	805
Remainder of belt on reel	mm	942	784
Total belt length for continuous webbing systems	mm	2520	2535

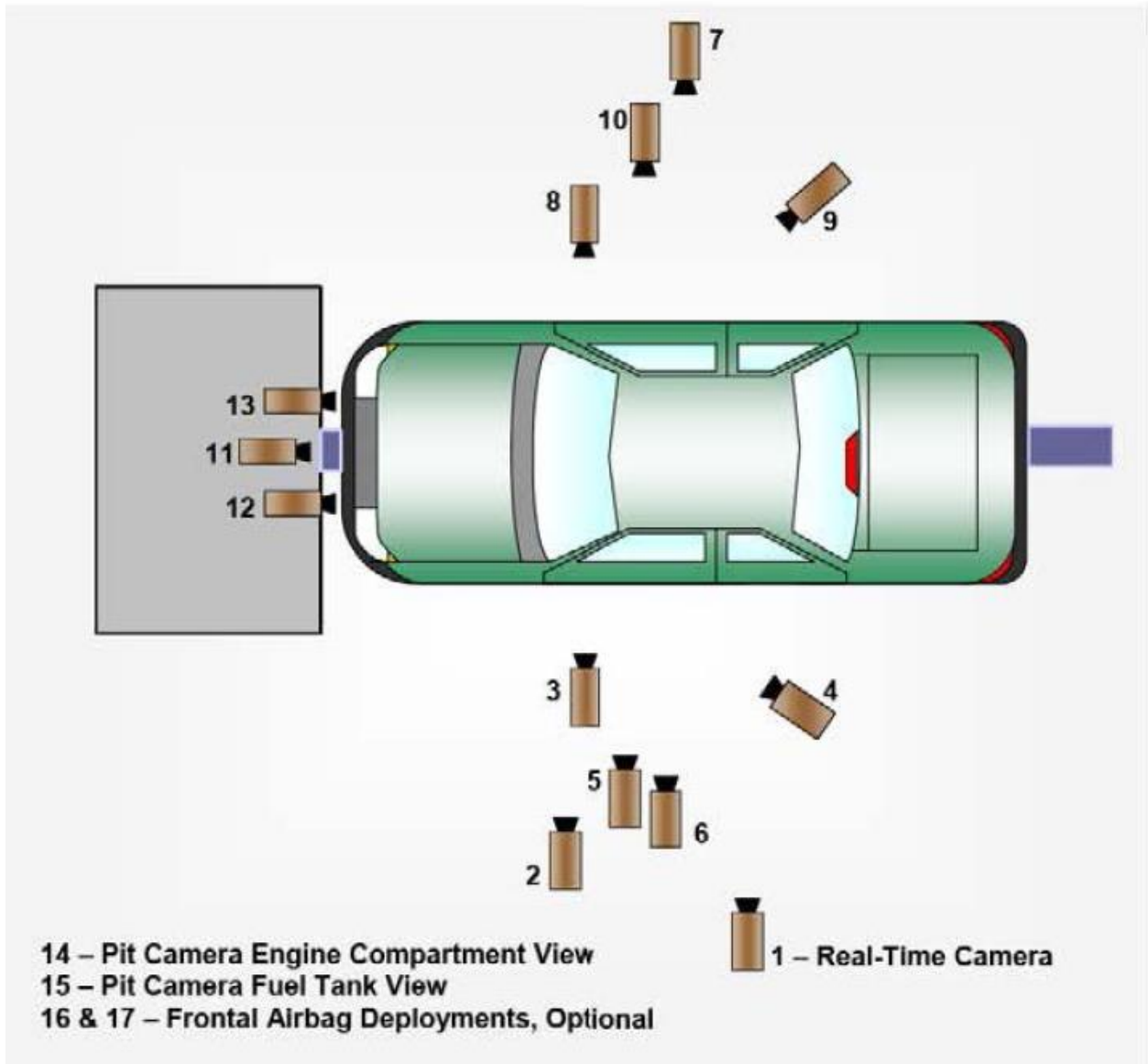
DATA SHEET NO. 6

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 6 (CONTINUED)**HIGH SPEED CAMERA LOCATIONS AND DATA**Test Vehicle: 2018 Ford F-150 SuperCabNHTSA No.: Q20180209Test Program: NCAP Frontal ImpactTest Date: 4/13/2018**CAMERA LOCATIONS**

No.	Camera View	Location (mm)			Lens (mm)	Frame Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-889	-5827	-1597	Zoom	30
2	Driver Close-Up	-1842	-6465	-1484	50	1000
3	Left Front Half	-1277	-5335	-1336	28	1000
4	Left Angle	-4025	-3701	-2049	25	1000
5	Steering Column - Top	-2099	-5482	-2191	50	1000
6	Steering Column – Bottom	-2099	-5255	-1525	50	1000
7	Right Overall	-6959	2525	-1273	20	1000
8	Passenger Close-Up	-6512	1517	-1484	50	1000
9	Right Front Half	-3662	3967	-1945	25	1000
10	Right Angle	-5600	975	-1369	28	1000
11	Windshield	-304	0	-2641	25	1000
12	Driver Windshield	-304	-535	-2641	12.5	1000
13	Passenger Windshield	-304	425	-2641	25	1000
14	Pit Front	-1226	0	3153	25	1000
15	Pit Rear	-3390	0	3215	12.5	1000
16	Onboard Driver Airbag (Optional)				12.5	1000
17	Onboard Passenger Airbag (Optional)				12.5	1000

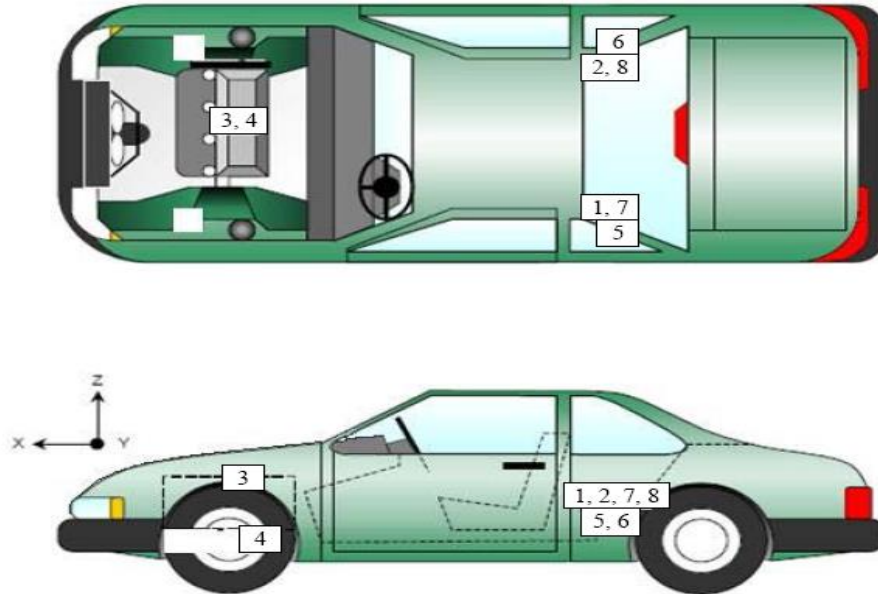
Reference Points: +X – forward of impact plane
+Y – right of monorail center
+Z – into ground

DATA SHEET NO. 7

VEHICLE ACCELEROMETER DATA

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Location (mm)		
		X	Y	Z
1	Left Rear Accelerometer – X Direction	3100	-435	-725
2	Right Rear Accelerometer – X Direction	3100	435	-703
3	Engine Top X	5400	135	-1075
4	Engine Bottom X	5133	0	-375
5	Left Rear Accelerometer – Z Direction	3100	-435	-735
6	Right Rear Accelerometer – Z Direction	3100	435	-713
7	Left Rear Accelerometer – X Direction Redundant	3100	-507	-725
8	Right Rear Accelerometer- X Direction Redundant	3100	490	-703

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

DATA SHEET NO. 8

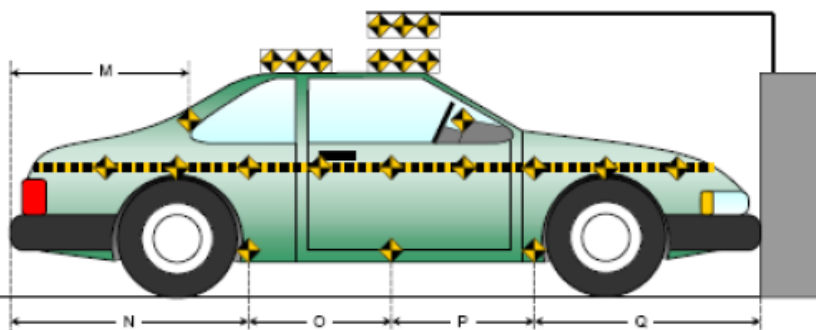
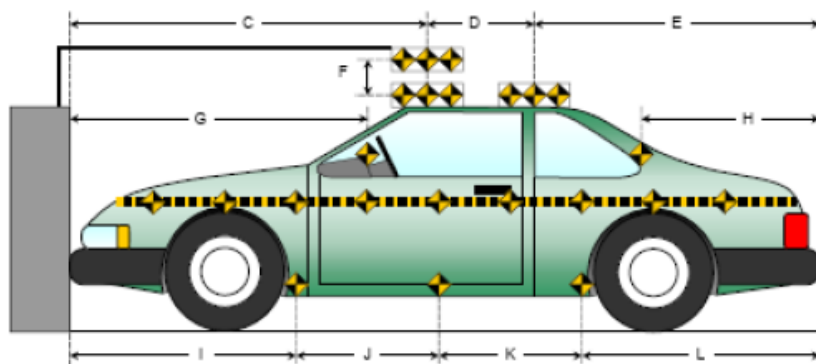
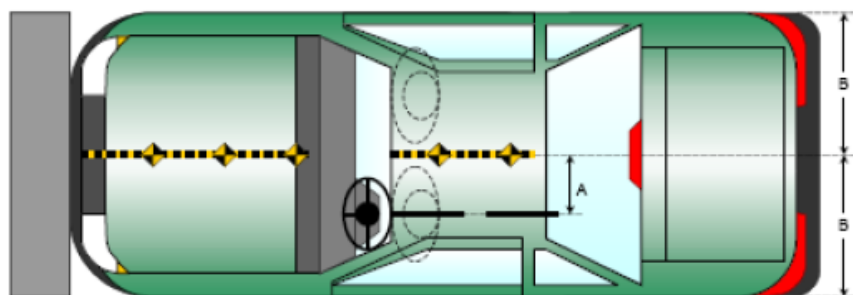
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

Item	Value
A	482
B	1022
C	2484
D	599
E	3210
F	244
G	1890
H	2875
I	1520
J	1527
K	1533
L	1790
M	2880
N	1793
O	1530
P	1528
Q	1519

All units in millimeters



DATA SHEET NO. 9

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

								Centerline							
A-16	A-15	A-14	A-13	A-12	A-11	A-10	A-09	A-08	A-07	A-06	A-05	A-04	A-03	A-02	A-01
B-16	B-15	B-14	B-13	B-12	B-11	B-10	B-09	B-08	B-07	B-06	B-05	B-04	B-03	B-02	B-01
C-16	C-15	C-14	C-13	C-12	C-11	C-10	C-09	C-08	C-07	C-06	C-05	C-04	C-03	C-02	C-01
D-16	D-15	D-14	D-13	D-12	D-11	D-10	D-09	D-08	D-07	D-06	D-05	D-04	D-03	D-02	D-01
E-16	E-15	E-14	E-13	E-12	E-11	E-10	E-09	E-08	E-07	E-06	E-05	E-04	E-03	E-02	E-01
F-16	F-15	F-14	F-13	F-12	F-11	F-10	F-09	F-08	F-07	F-06	F-05	F-04	F-03	F-02	F-01
G-16	G-15	G-14	G-13	G-12	G-11	G-10	G-09	G-08	G-07	G-06	G-05	G-04	G-03	G-02	G-01
H-16	H-15	H-14	H-13	H-12	H-11	H-10	H-09	H-08	H-07	H-06	H-05	H-04	H-03	H-02	H-01
I-16	I-15	I-14	I-13	I-12	I-11	I-10	I-09	I-08	I-07	I-06	I-05	I-04	I-03	I-02	I-01
J-16	J-15	J-14	J-13	J-12	J-11	J-10	J-09	J-08	J-07	J-06	J-05	J-04	J-03	J-02	J-01
K-16	K-15	K-14	K-13	K-12	K-11	K-10	K-09	K-08	K-07	K-06	K-05	K-04	K-03	K-02	K-01

DATA SHEET NO. 10

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018

INSTRUMENTATION

Instrumentation	Number of Channels Collected
Driver Dummy Accelerometers	44
Passenger Dummy Accelerometers	44
Vehicle Structure Accelerometers	8
Total	96

CAMERA COVERAGE

Type of Camera	Number Used in this Test
High-Speed Vehicle Onboard	2
High-Speed Offboard	14
Real-Time Panning	1
Total	17

DATA SHEET NO. 11

POST-TEST OBSERVATIONS

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

TEST DUMMY INFORMATION AND CONTACT LOCATIONS

Description	Driver	Passenger
Dummy Type / Serial No.	Hybrid III 50th/ 037	Hybrid III 5th/ 070
Head Contact	Frontal Airbag, Head Restraint	Frontal Airbag, Head Restraint
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Remained closed & latched, operational	Remained closed & latched, operational
Rear Door Opening	Remained closed & latched, operational	Remained closed & latched, operational
Seat Track Shift (mm)	0	0
Seat Back Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

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

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	286
Center	mm	288
Right Side	mm	342
Average	mm	305

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

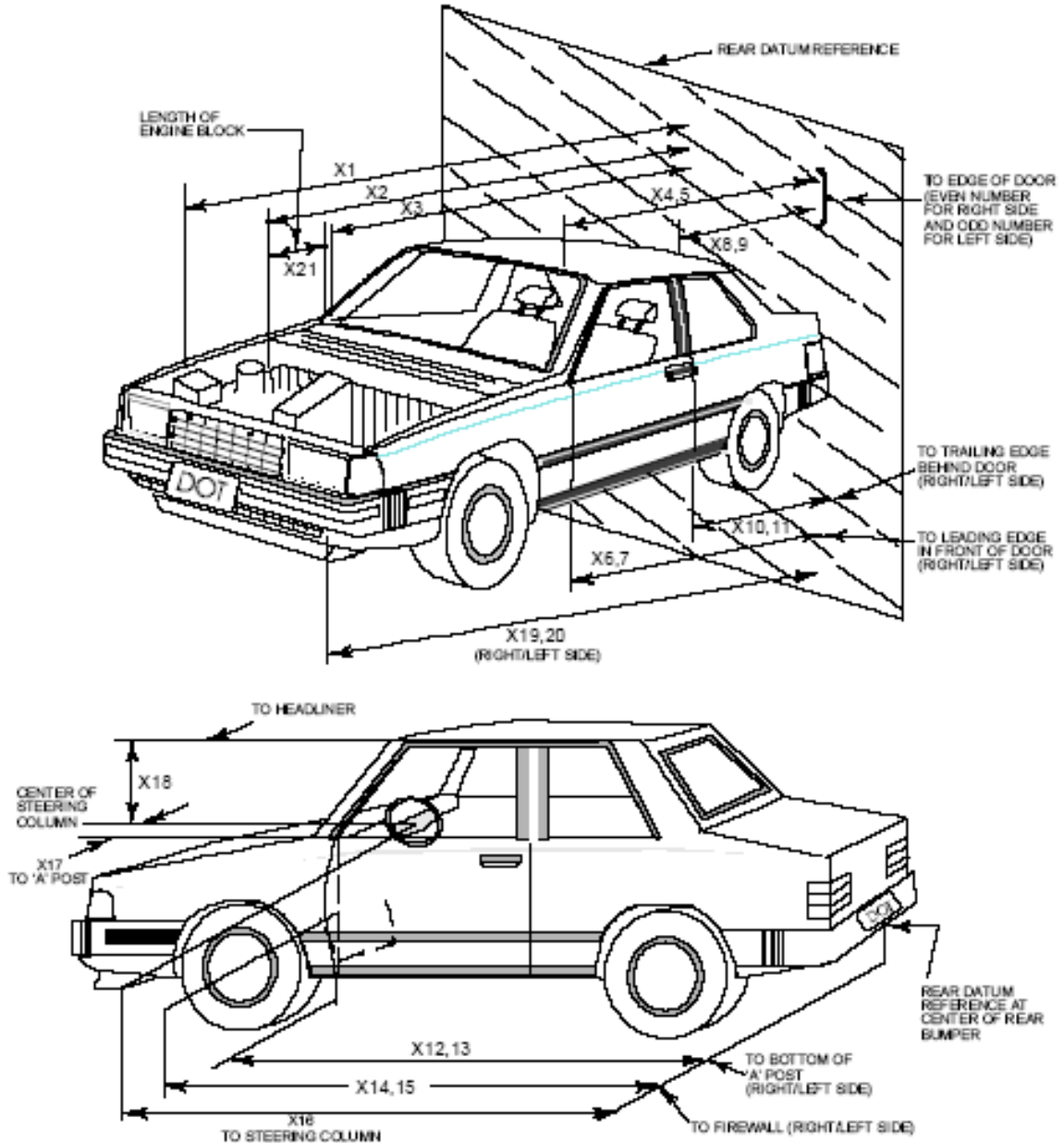
Restraint Type	Driver (Occupant 1)		Passenger (Occupant 2)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	Yes	Yes
Side Curtain Airbag	Yes	No	Yes	No
Torso/Pelvis Airbag	Yes	No	Yes	No
Pelvis Airbag	No	N/A	No	N/A
Knee Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load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

DATA SHEET NO. 12

VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018



DATA SHEET NO. 12 (CONTINUED)**VEHICLE PROFILE MEASUREMENTS**Test Vehicle: 2018 Ford F-150 SuperCabNHTSA No.: Q20180209Test Program: NCAP Frontal ImpactTest Date: 4/13/2018

No.	Measurement Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	6370	5790	580
2	Rear Surface of Vehicle (RSOV) to Front of Engine	5505	5340	165
3	RSOV to Firewall	5230	5215	15
4	RSOV to Upper Leading Edge of Right Door	4770	4763	7
5	RSOV to Upper Leading Edge of Left Door	4772	4758	14
6	RSOV to Lower Leading Edge of Right Door	4715	4707	8
7	RSOV to Lower Leading Edge of Left Door	4712	4700	12
8	RSOV to Upper Trailing Edge of Right Door	3582	3572	10
9	RSOV to Upper Trailing Edge of Left Door	3582	3568	14
10	RSOV to Lower Trailing Edge of Right Door	3562	3550	12
11	RSOV to Lower Trailing Edge of Left Door	3562	3550	12
12	RSOV to Bottom of "A" Post-of Right Side	4720	4706	14
13	RSOV to Bottom of "A" Post-of Left Side	4720	4708	12
14	RSOV to Firewall, Right Side	5352	5207	145
15	RSOV to Firewall, Left Side	5340	5149	191
16	RSOV to Steering Column	4287	4342	-55
17	Center of Steering Column to "A" Post	320	316	4
18	Center of Steering Column to Headliner	475	465	10
19	RSOV to Right Side of Front Bumper	6202	5802	400
20	RSOV to Left Side of Front Bumper	6200	5809	391
21	Length of Engine Block	600	600	0
RD	RSOV to Right Side of Dash Panel	4555	4553	2
CD	RSOV to Center of Dash Panel	4517	4507	10
LD	RSOV to Left Side of Dash Panel	4555	4544	11

All Dimensions in mm

DATA SHEET NO. 13

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018

VEHICLE INFORMATION

VIN: 1FTFX1EG8JKC20767
Vehicle Size Category: Truck

Wheelbase: 4160
Test Weight (kg): 2665.6

ACCELEROMETER DATA

Accelerometer Locations: As listed on Page 15 of this report.

Cal. Procedure/Interval: TRC procedure / 6 month interval

Integration Algorithm: Trapezoidal

Linearity: > 99%

Impact Velocity (km/h): 56.52

Velocity Change (km/h): 63.79

Time of Separation (ms): 195

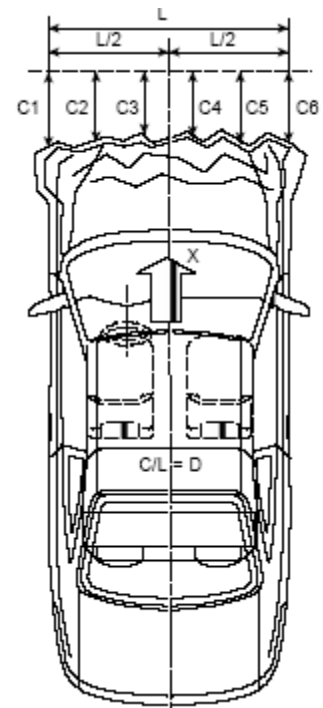
CRUSH PROFILE

Collision Deformation Classification: 12FDEW2

Midpoint of Damage: Centerline

Damage Region Length (mm): 1524

Impact Mode: Frontal



No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	6200	5809	391
C2	Crush zone 2 at left side	mm	6340	5810	530
C3	Crush zone 3 at left side	mm	6370	5805	565
C4	Crush zone 4 at right side	mm	6370	5790	580
C5	Crush zone 5 at right side	mm	6340	5810	530
C6	Crush zone 6 at right side	mm	6202	5802	400
L	C1 to C6	mm	1524	1485	39

DATA SHEET NO. 14

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

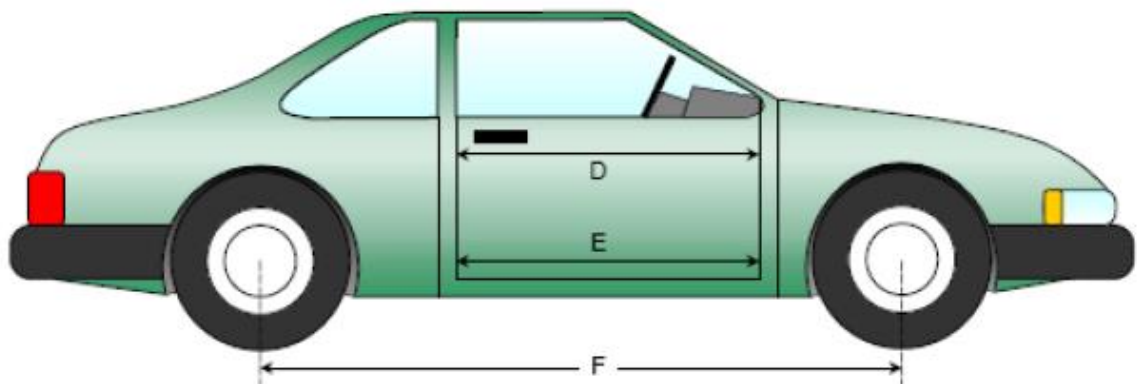
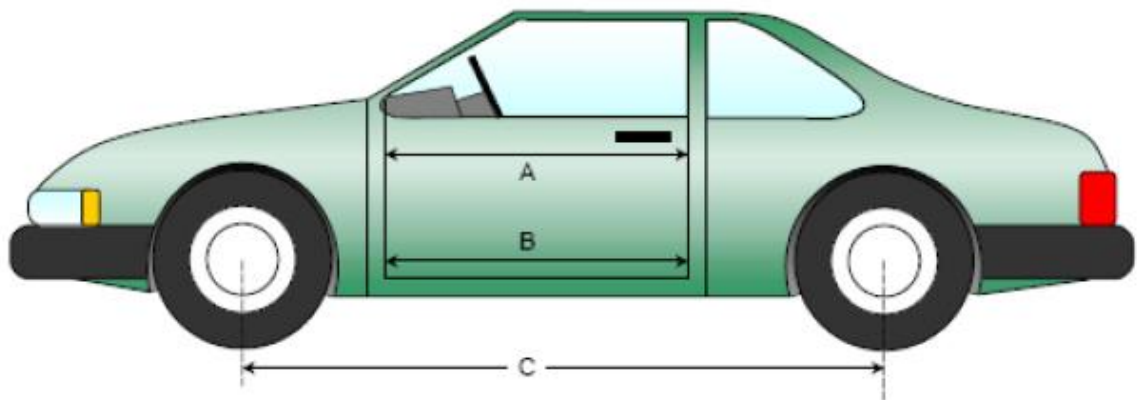
NHTSA No.: Q20180209
Test Date: 4/13/2018

DOOR OPENING WIDTH

No.	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1105	1105	0
B	Left Side Lower	mm	1040	1033	7
C	Right Side Upper	mm	1107	1102	5
D	Right Side Lower	mm	1040	1044	-4

WHEELBASE MEASUREMENTS

No.	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	4160	4040	120
F	Right Side Wheelbase	mm	4160	4050	110



DATA SHEET NO. 14 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

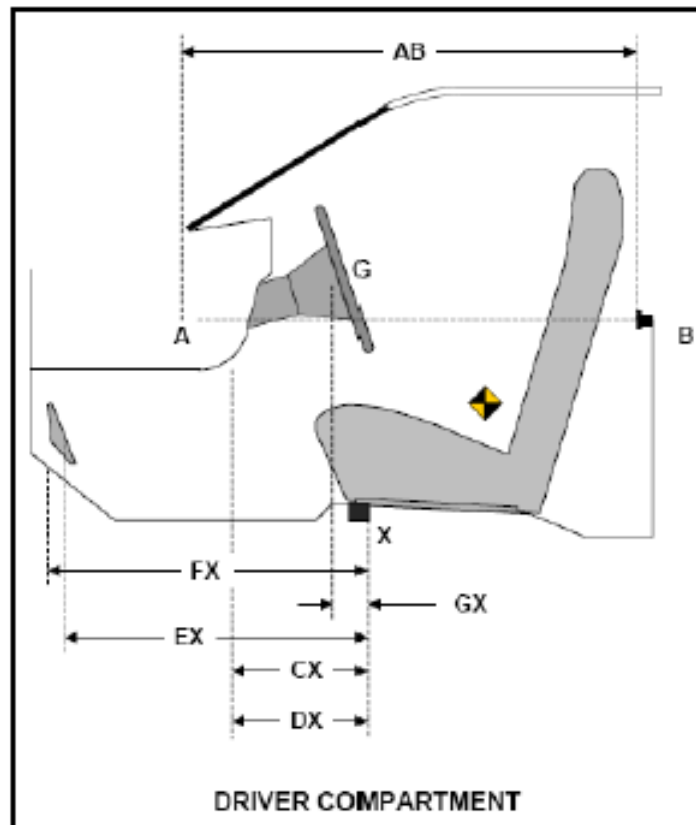
Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	1110	1093	17
CX	Left Knee Bolster to X	mm	270	286	-16
DX	Right Knee Bolster to X	mm	240	263	-23
EX	Brake Pedal to X	mm	542	522	20
FX	Foot Rest to X	mm	555	555	0
GX	Center of Steering Column Wheel Hub to X	mm	45	115	-70

X = Front of Seat Track (Stationary)



DATA SHEET NO. 15

SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018

Please provide windshield mounting details.

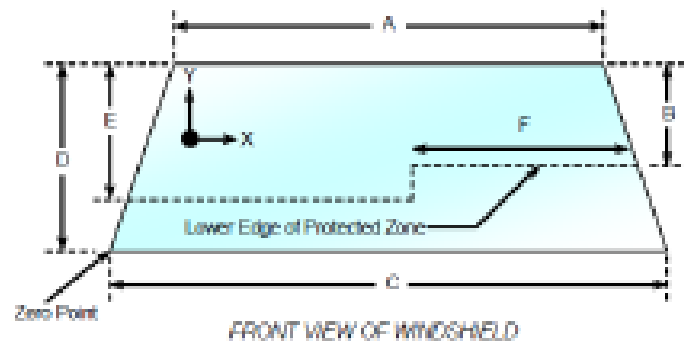
The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicle not equipped with occupant passive restraint and 50% for each side of the windshield for vehicle which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.4° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2410.0	2410.0	100.0
Right Side	2410.0	2410.0	100.0
Total	4820.0	4820.0	100.0

Item	Units	Value
A	mm	1475
B	mm	465
C	mm	1785
D	mm	780
E	mm	530
F	mm	550



AREAS OF PROTECTED ZONE FAILURES

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

X	Y
NA	NA
NA	NA
NA	NA
NA	NA

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

X	Y
NA	NA
NA	NA
NA	NA
NA	NA

DATA SHEET NO. 15 (CONTINUED)

SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2018 Ford F-150 SuperCab

NHTSA No.: Q20180209

Test Program: NCAP Frontal Impact

Test Date: 4/13/2018

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 21.4°C

Test Time: 15:13

Stoddard Solvent Spillage Measurements

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

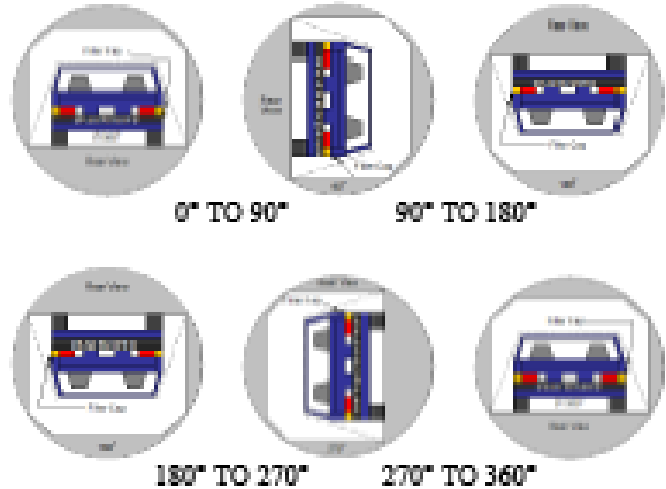
DATA SHEET NO. 16

FMVSS 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2018 Ford F-150 SuperCab
 Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
 Test Date: 4/13/2018

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage:
None



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	90	330	420
90° to 180°	90	330	840
180° to 270°	90	330	1260
270° to 360°	90	330	1480

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

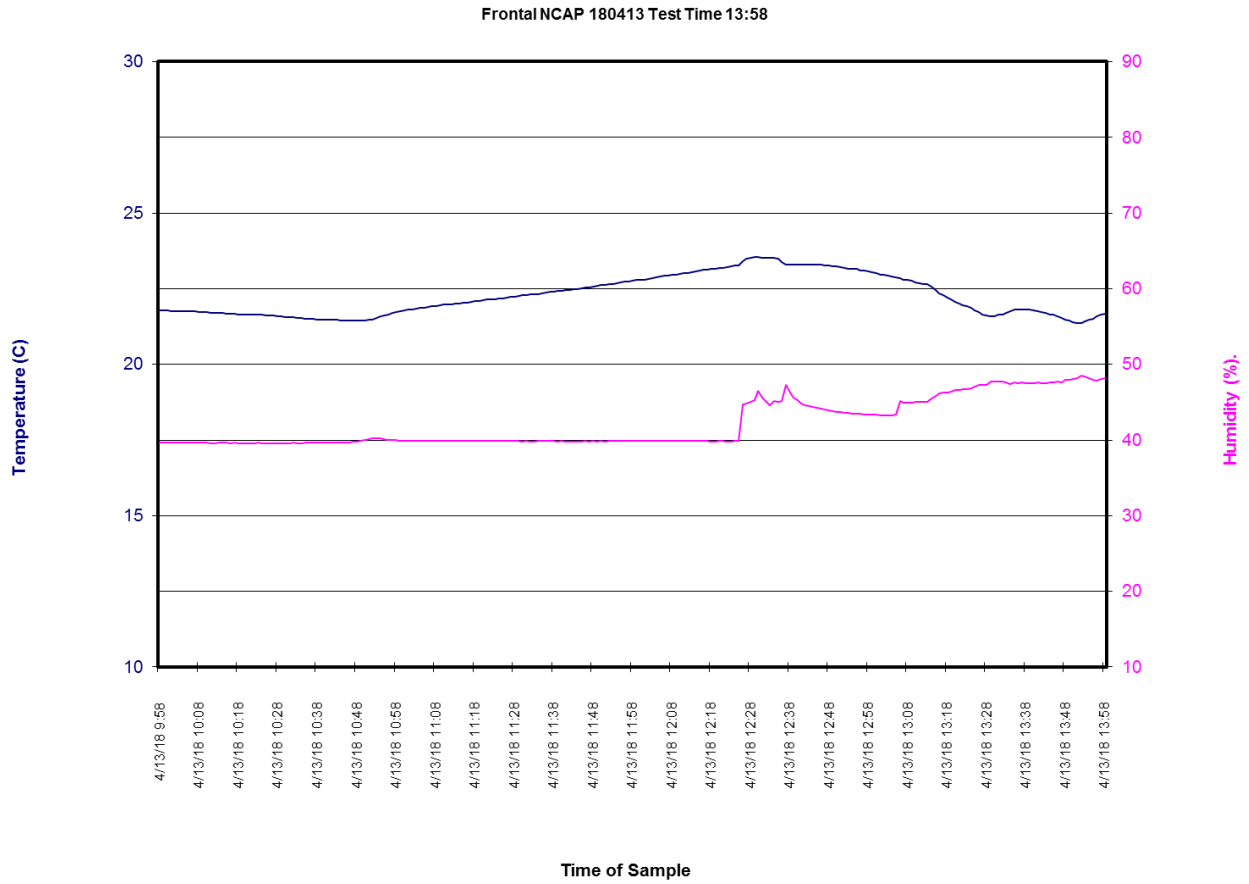
Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

DATA SHEET NO. 17

DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2018 Ford F-150 SuperCab
Test Program: NCAP Frontal Impact

NHTSA No.: Q20180209
Test Date: 4/13/2018



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

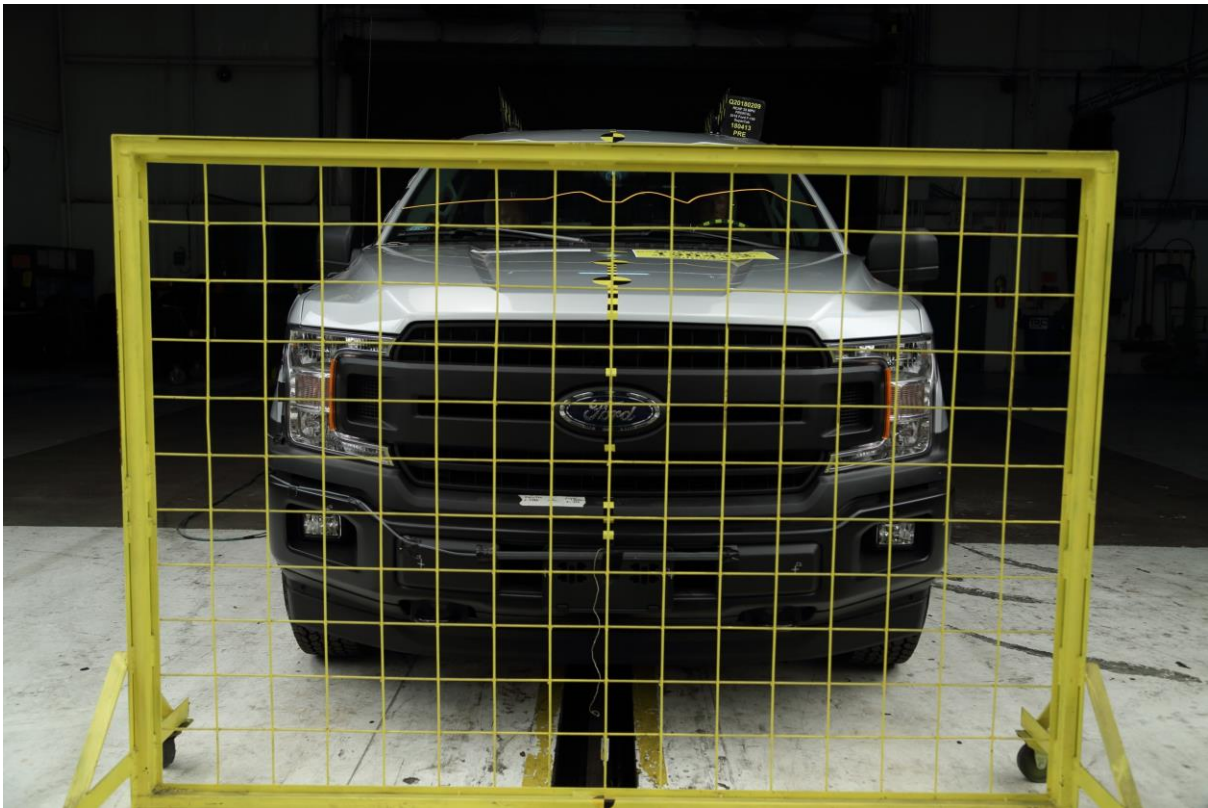
No.	Description	Page
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2	Pre-Test Load Cell Wall	A-5
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4	Manufacturer's Label	A-6
5	Tire Placard	A-7
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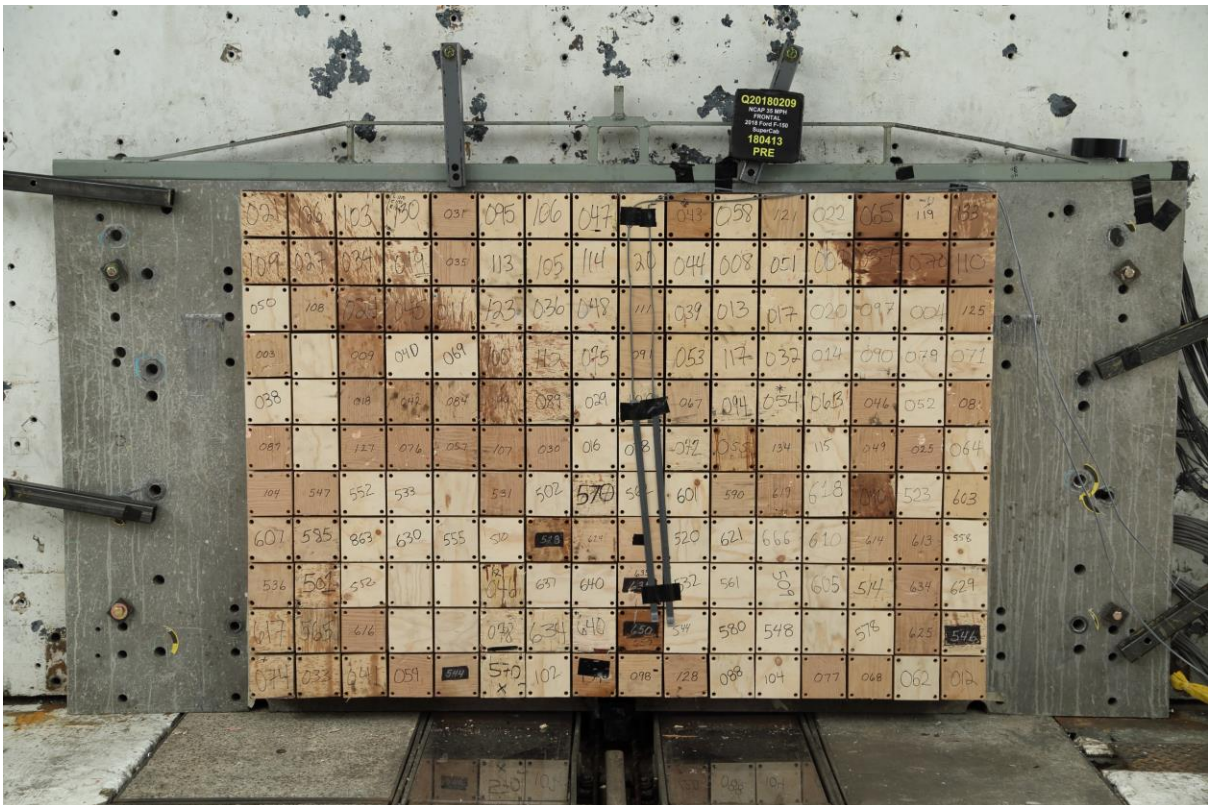
No.	Description	Page
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31	Post-Test Driver Dummy Front View	A-24
32	Pre-Test Driver Dummy Window View	A-25
33	Post-Test Driver Dummy Window View	A-25
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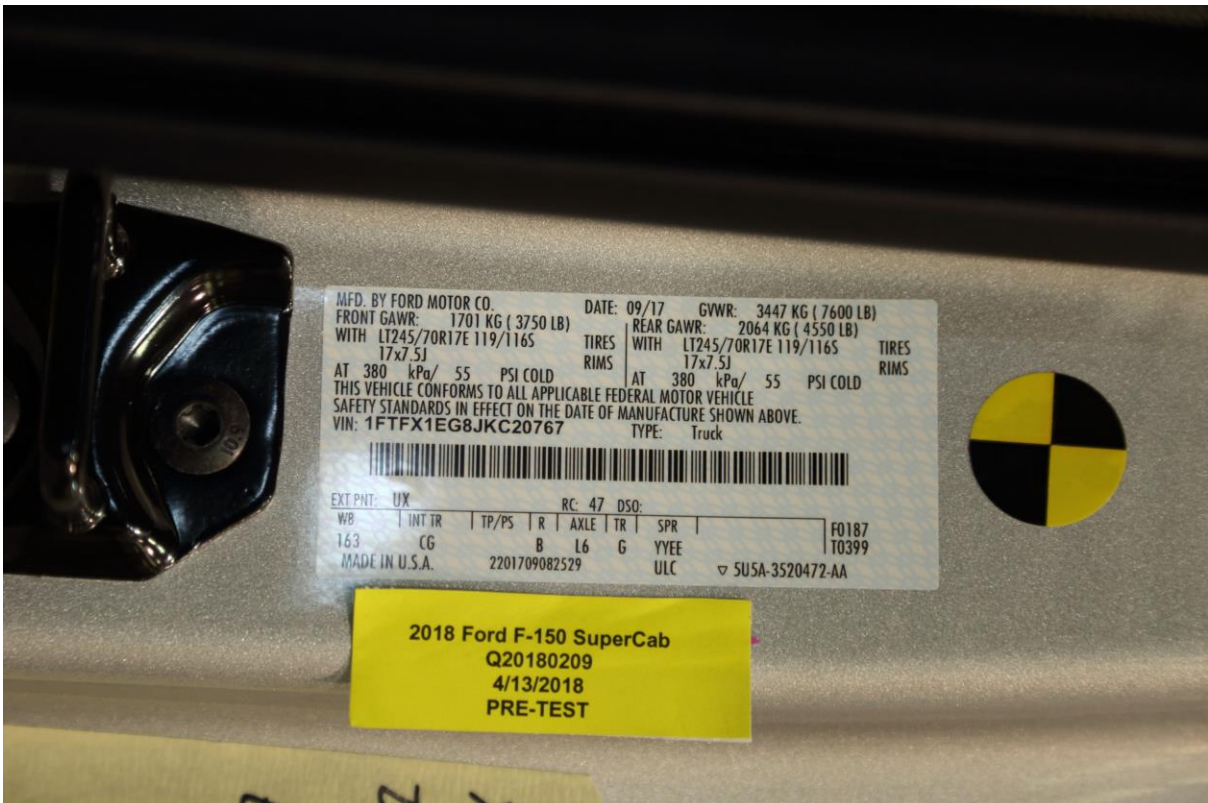
001 Load Cell Location



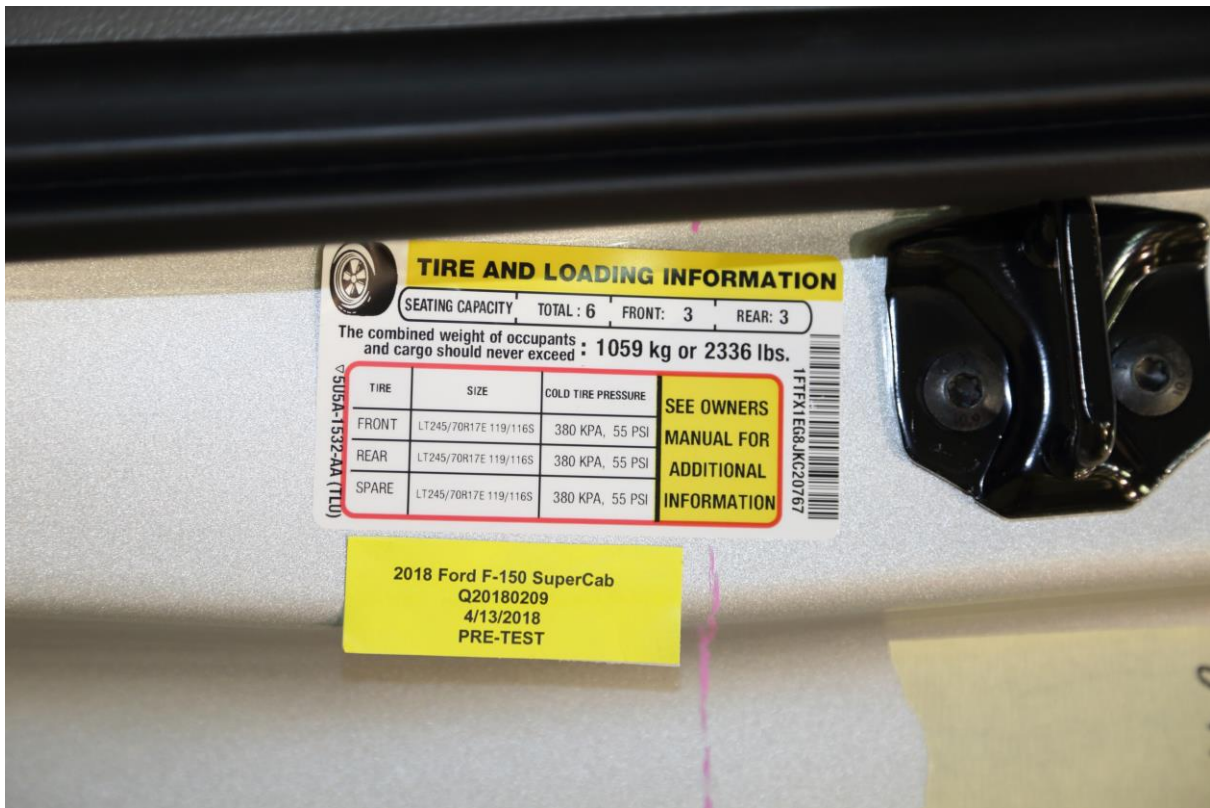
002 Pre-Test Load Cell Wall



003 Post-Test Load Cell Wall



004 Manufacturer's Label



005 Tire Placard

Intentionally Left Blank



006 2018 Ford F-150 SuperCab Frontal As Delivered



007 Left Rear 3-4 View, as Received



008 Pre-Test Front View of Test Vehicle



009 Post-Test Front View of Test Vehicle



010 Pre-Test Left View of Test Vehicle



011 Post-Test Left View of Test Vehicle



012 Pre-Test Right View of Test Vehicle



013 Post-Test Right View of Test Vehicle



014 Pre-Test Right Front 3-4 View



015 Post-Test Right Front 3-4 View



016 Pre-Test Left Rear 3-4 View



017 Post-Test Left Rear 3-4 View



018 Pre-Test Windshield View



019 Post-Test Windshield View



020 Pre-Test Engine Compartment View



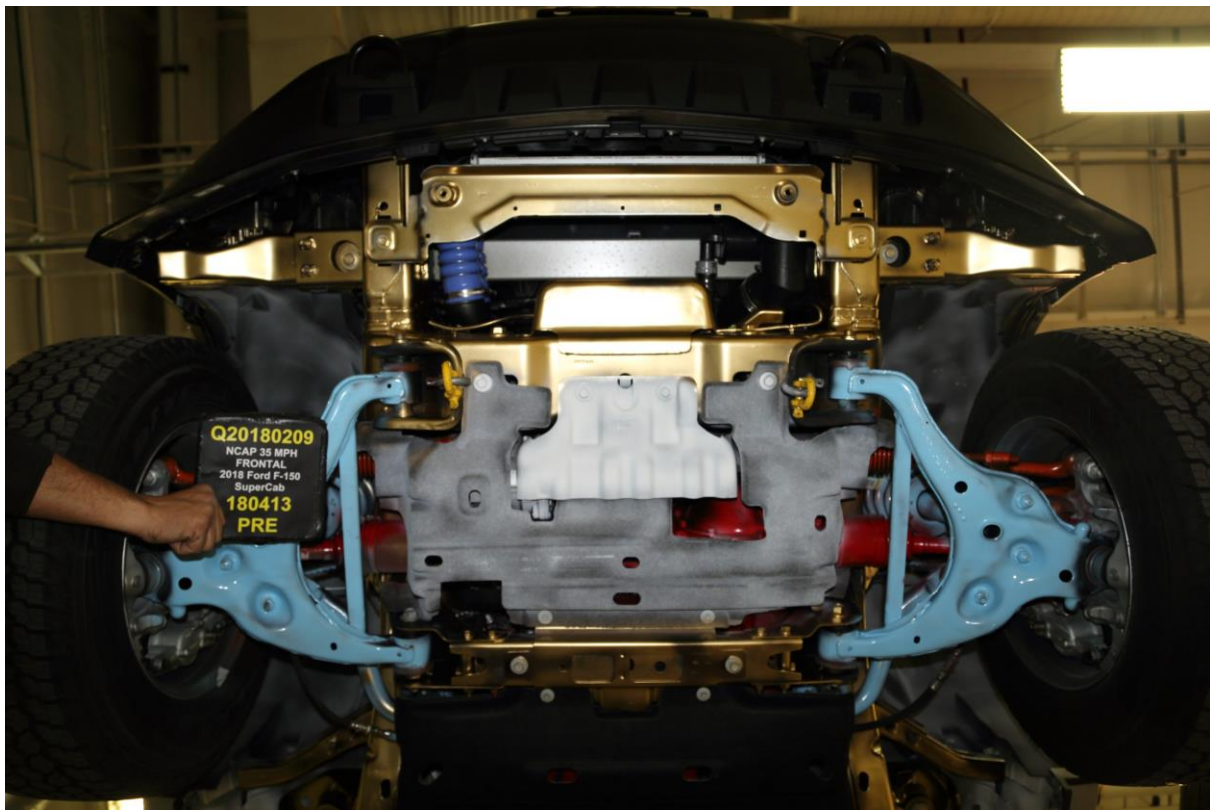
021 Post-Test Engine Compartment View



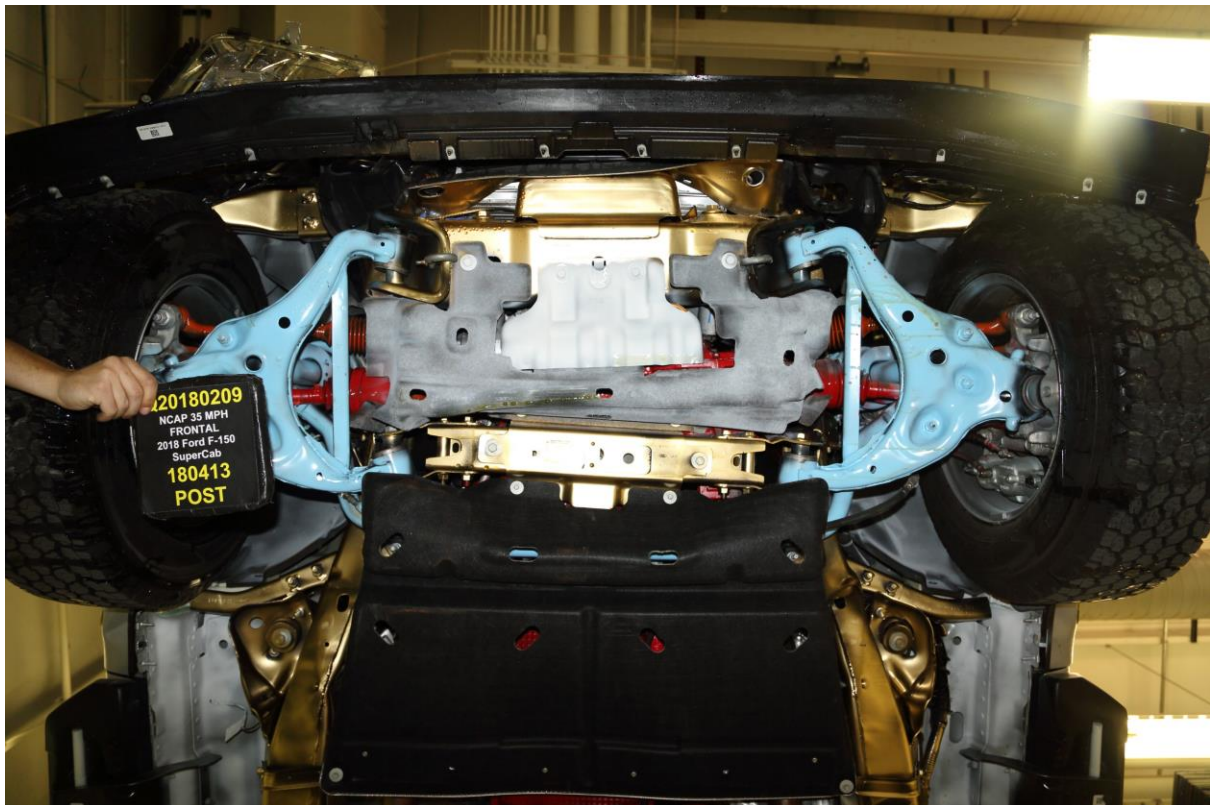
022 Pre-Test Fuel Filler Cap View



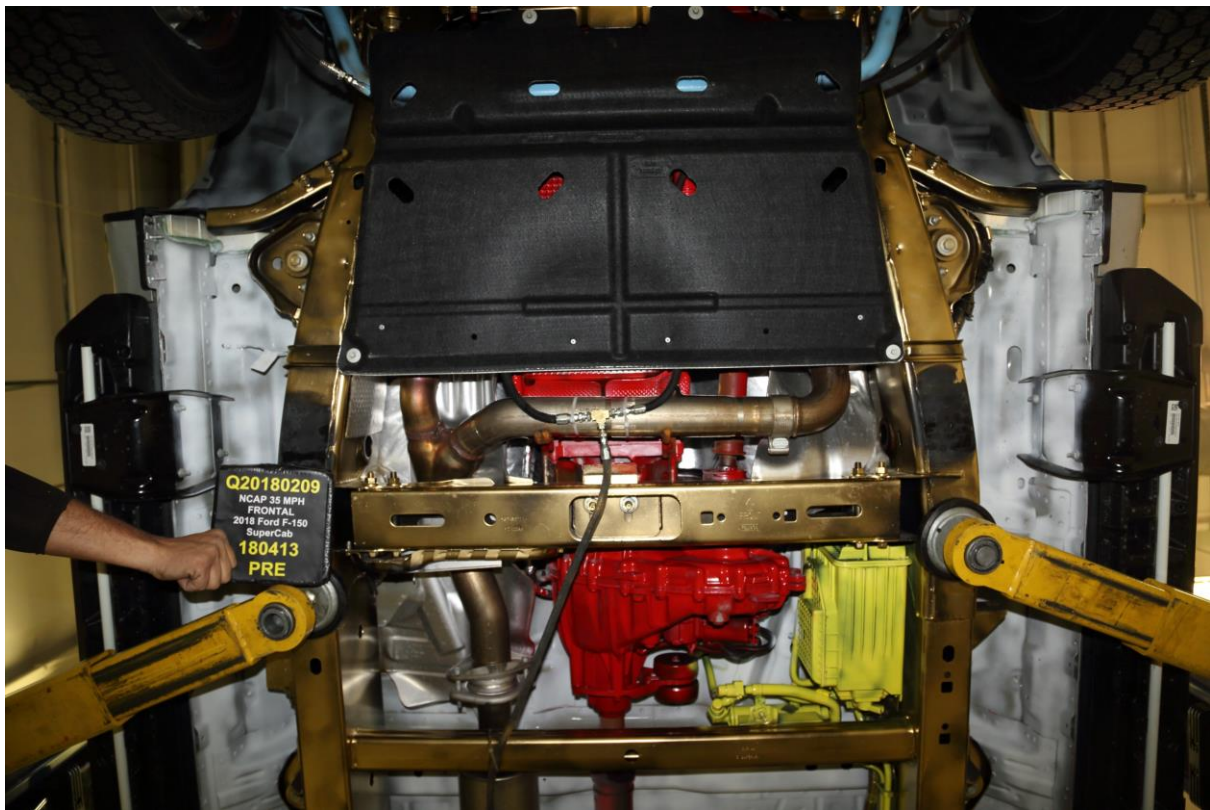
023 Post-Test Fuel Filler Cap View



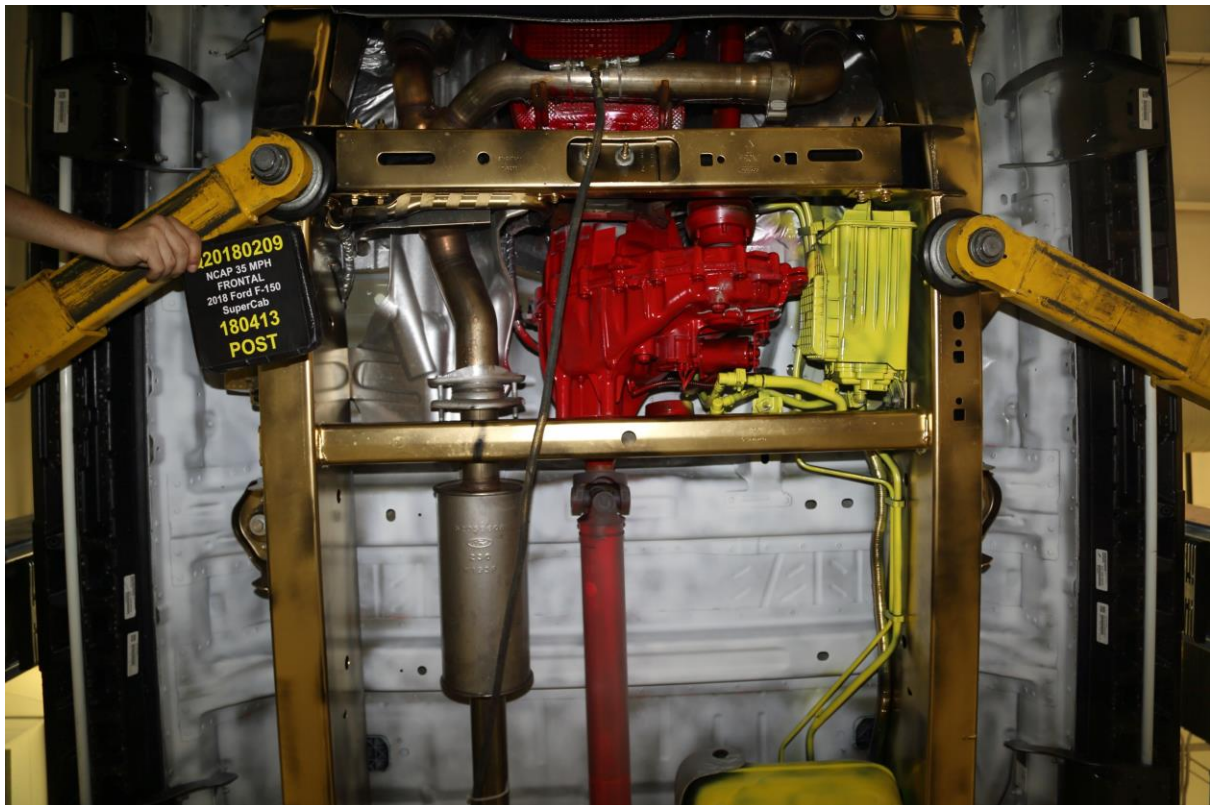
024 Pre-Test Front Underbody View



025 Post-Test Front Underbody View



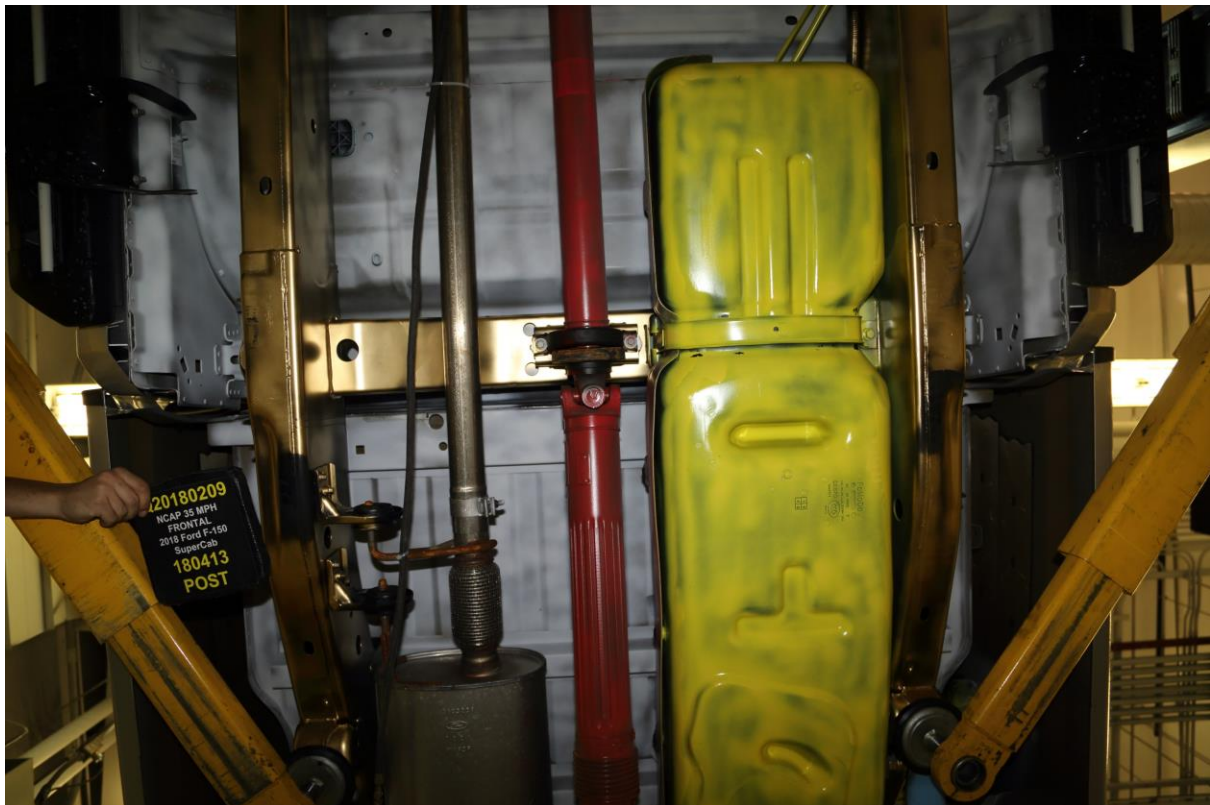
025a Pre-Test Mid Front Underbody View



025b Post-Test Mid Front Underbody View



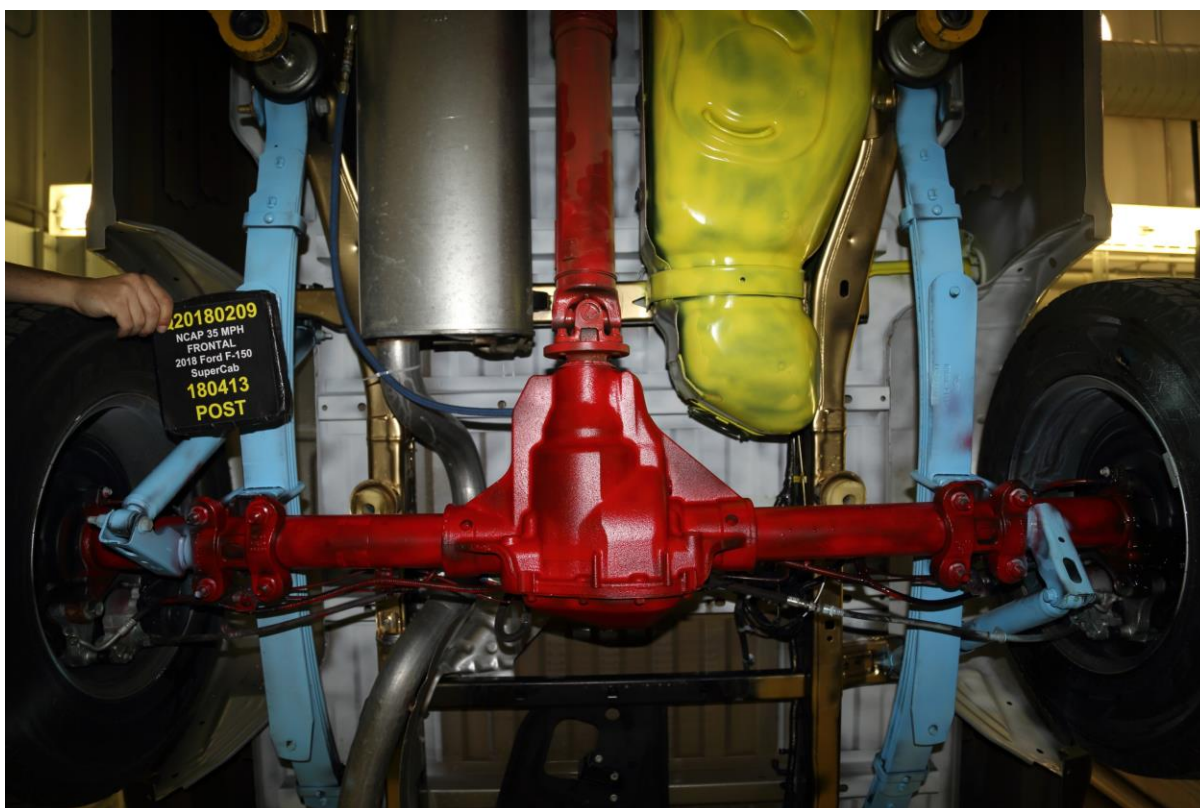
025c Pre-Test Mid Underbody View



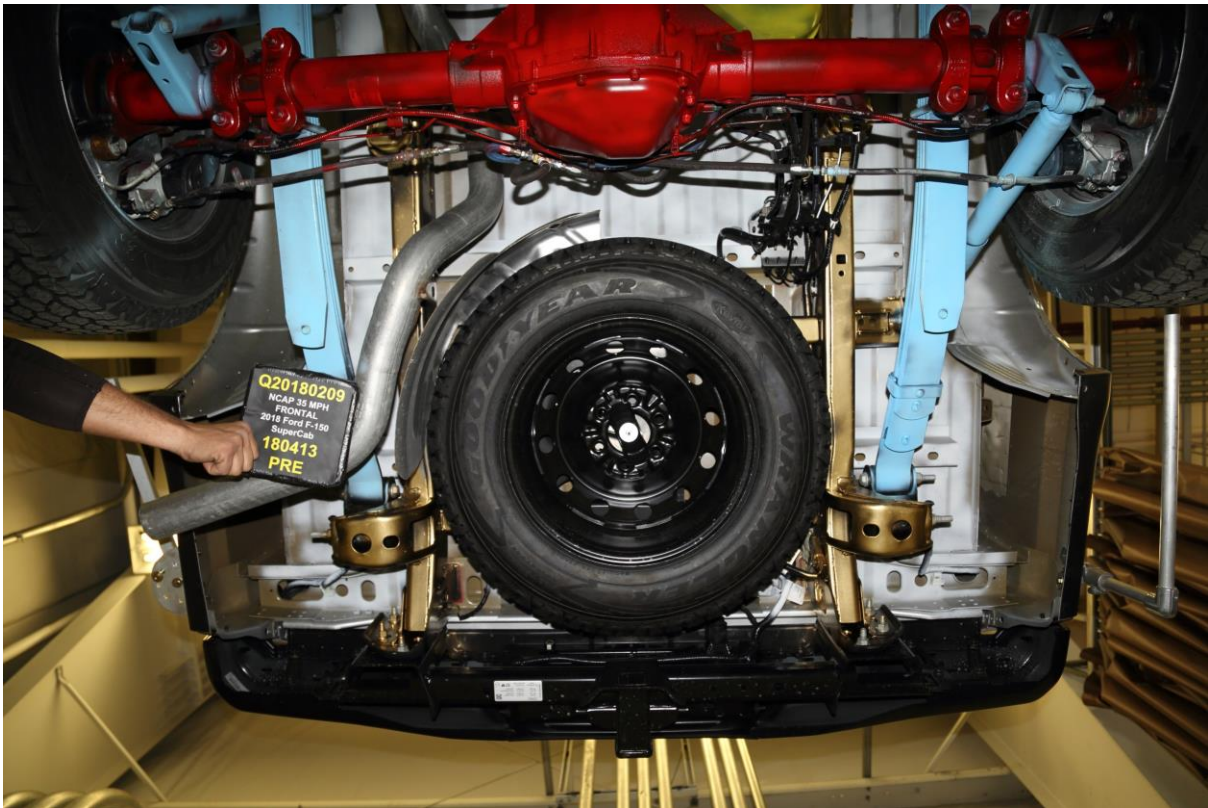
025d Post-Test Mid Underbody View



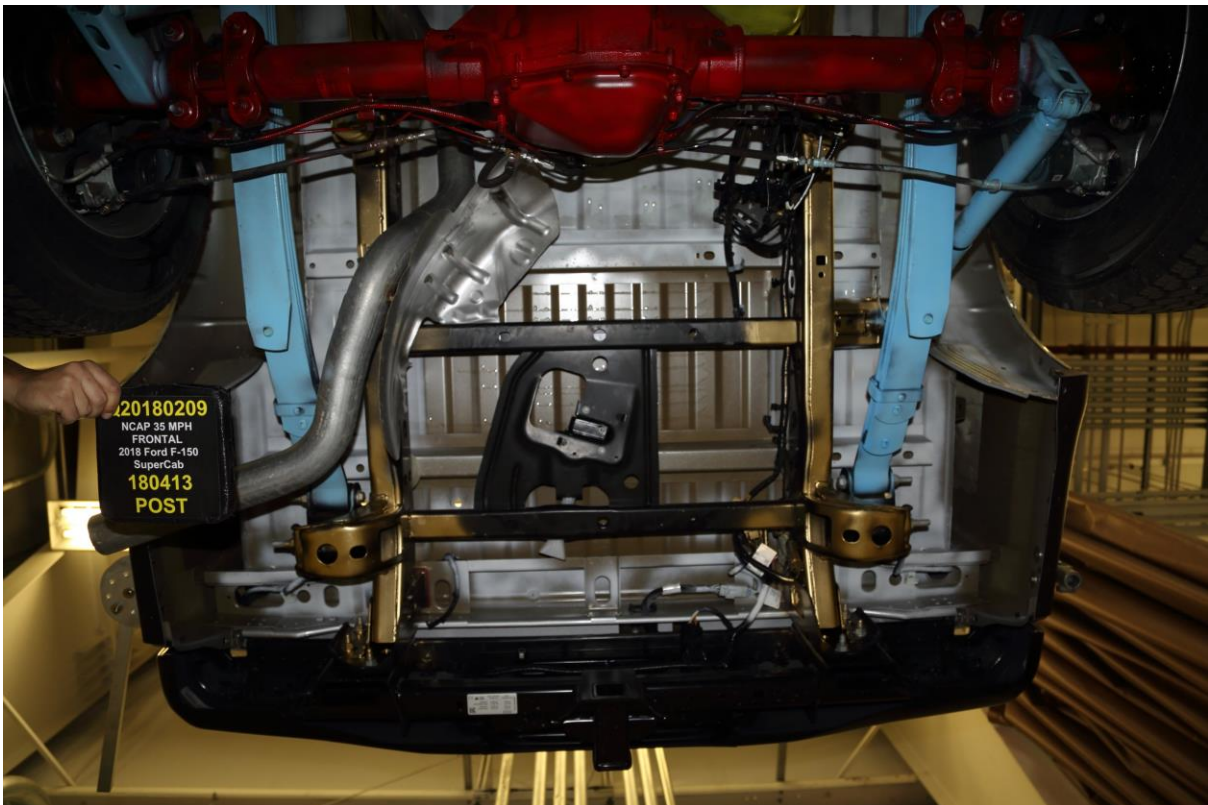
025e Pre-Test Mid Rear Underbody View



025f Post-Test Mid Rear Underbody View



026 Pre-Test Rear Underbody View



027 Post-Test Rear Underbody View



028 Pre-Test Dummy Cable Routing



028a Pre-Test Dummy Cable Routing



029 Post-Test Dummy Cable Routing



029a Post-Test Dummy Cable Routing



030 Pre-Test Driver Dummy Front View



031 Post-Test Driver Dummy Front View



032 Pre-Test Driver Dummy Window View



033 Post-Test Driver Dummy Window View



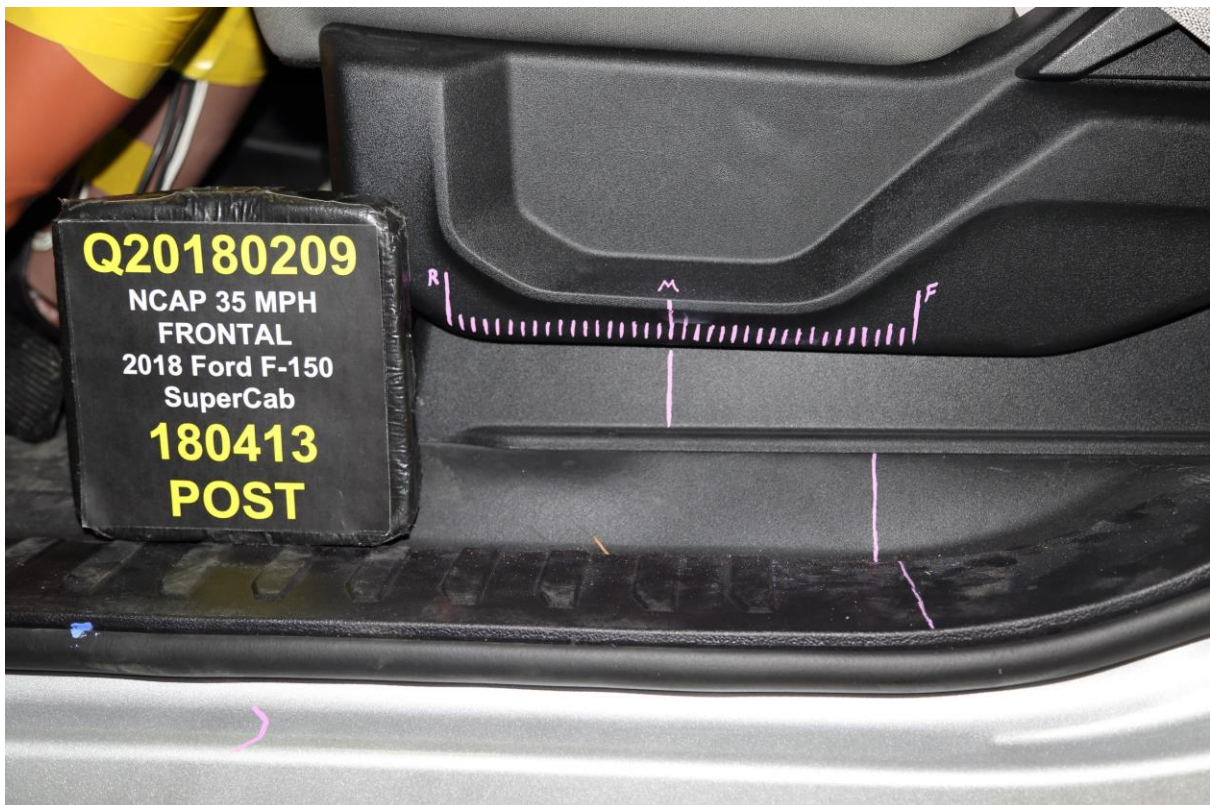
034 Pre-Test Driver Dummy and Vehicle Interior View



035 Post-Test Driver Dummy and Vehicle Interior View



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



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



038 Pre-Test View of Belt Anchorage for Driver Dummy



039 Post-Test View of Belt Anchorage for Driver Dummy



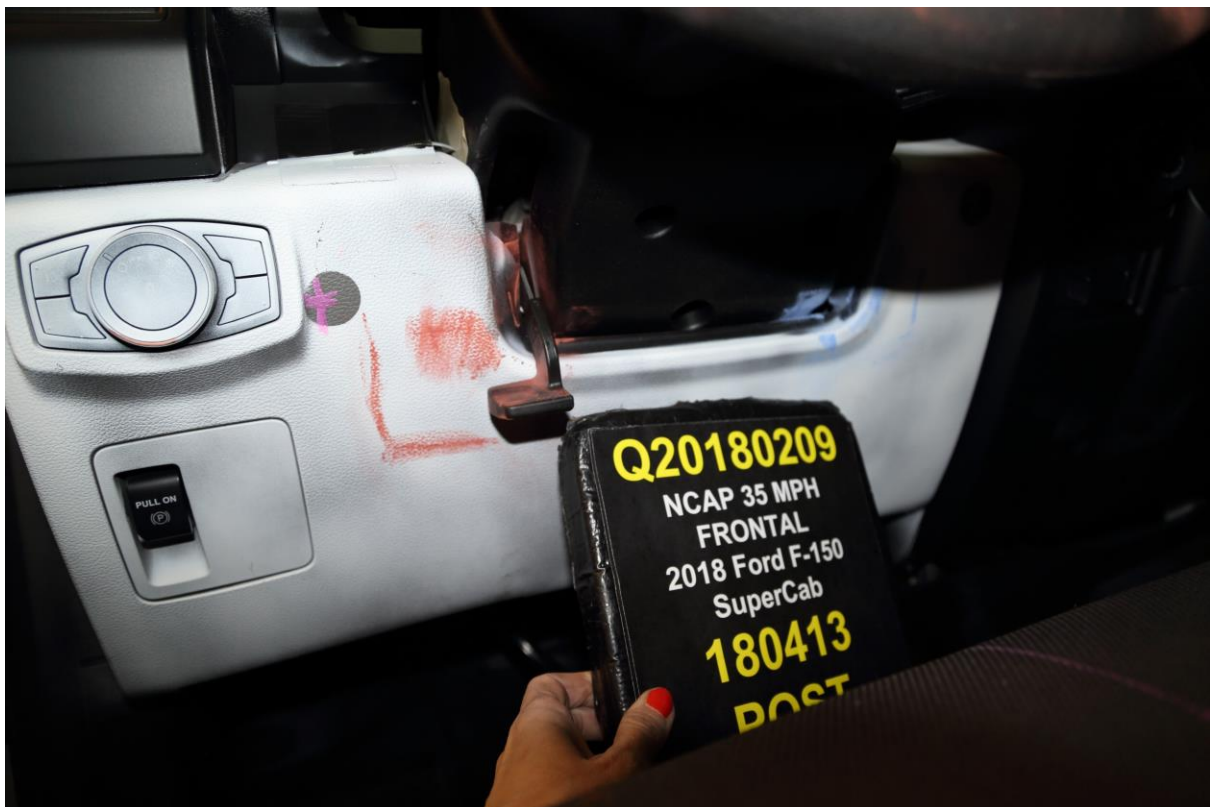
040 Pre-Test Driver Dummy Feet



041 Post-Test Driver Dummy Feet



042 Pre-Test Driver's Side Knee Bolster



043 Post-Test Driver's Side Knee Bolster



044 Pre-Test Driver's Side Floorpan



045 Post-Test Driver's Side Floorpan



046 Post-Test Driver Dummy Face



047 Post-Test Driver Dummy Contact With Airbag



048 Post-Test Driver Dummy Contact With Headrest

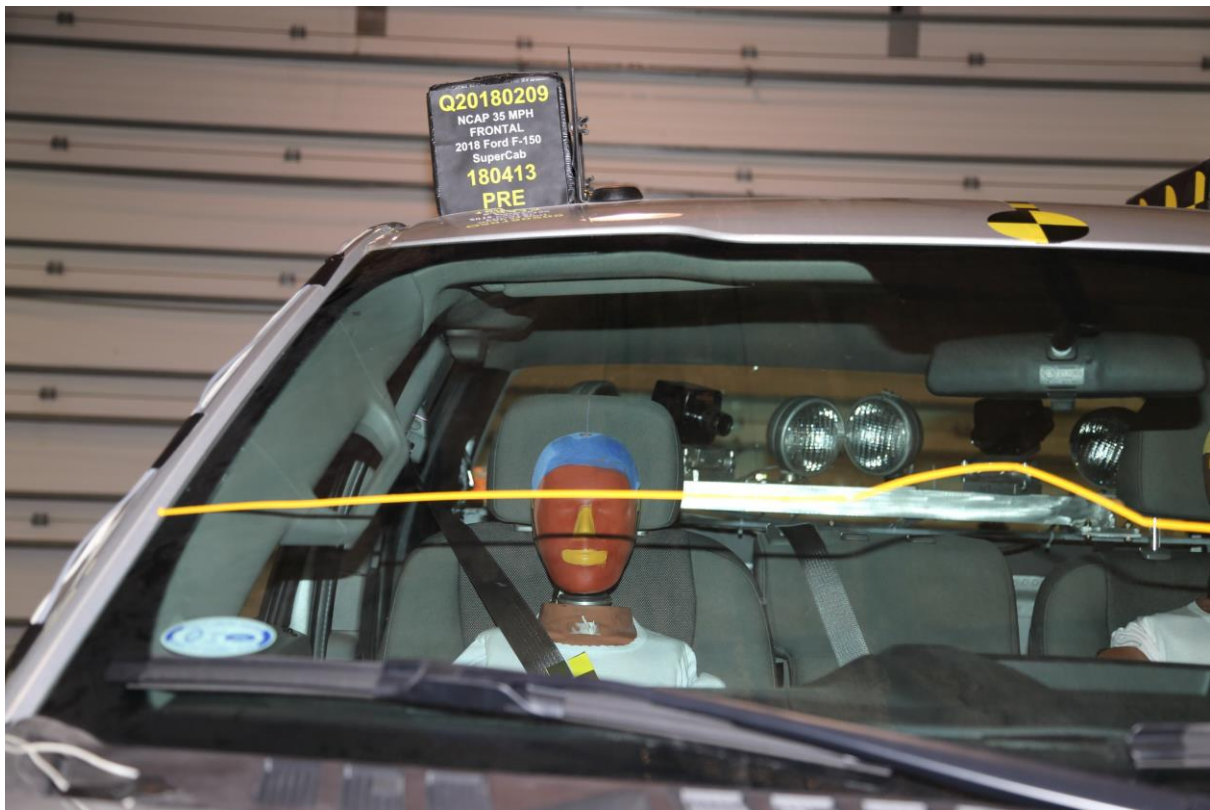
Intentionally Left Blank



049 Pre-Test View of the Steering Wheel



050 Post-Test View of the Steering Wheel



051 Pre-Test Passenger Dummy Front View



052 Post-Test Passenger Dummy Front View



053 Pre-Test Passenger Dummy Window View



054 Post-Test Passenger Dummy Window View



055 Pre-Test Passenger Dummy and Vehicle Interior View



056 Post-Test Passenger Dummy and Vehicle Interior View



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



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



059 Pre-Test View of Belt Anchorage for Passenger Dummy



060 Post-Test View of Belt Anchorage for Passenger Dummy



061 Pre-Test Passenger Dummy Feet



062 Post-Test Passenger Dummy Feet



063 Pre-Test Passenger's Side Knee Bolster



064 Post-Test Passenger's Side Knee Bolster



065 Pre-Test Passenger's Side Floorpan



066 Post-Test Passenger's Side Floorpan



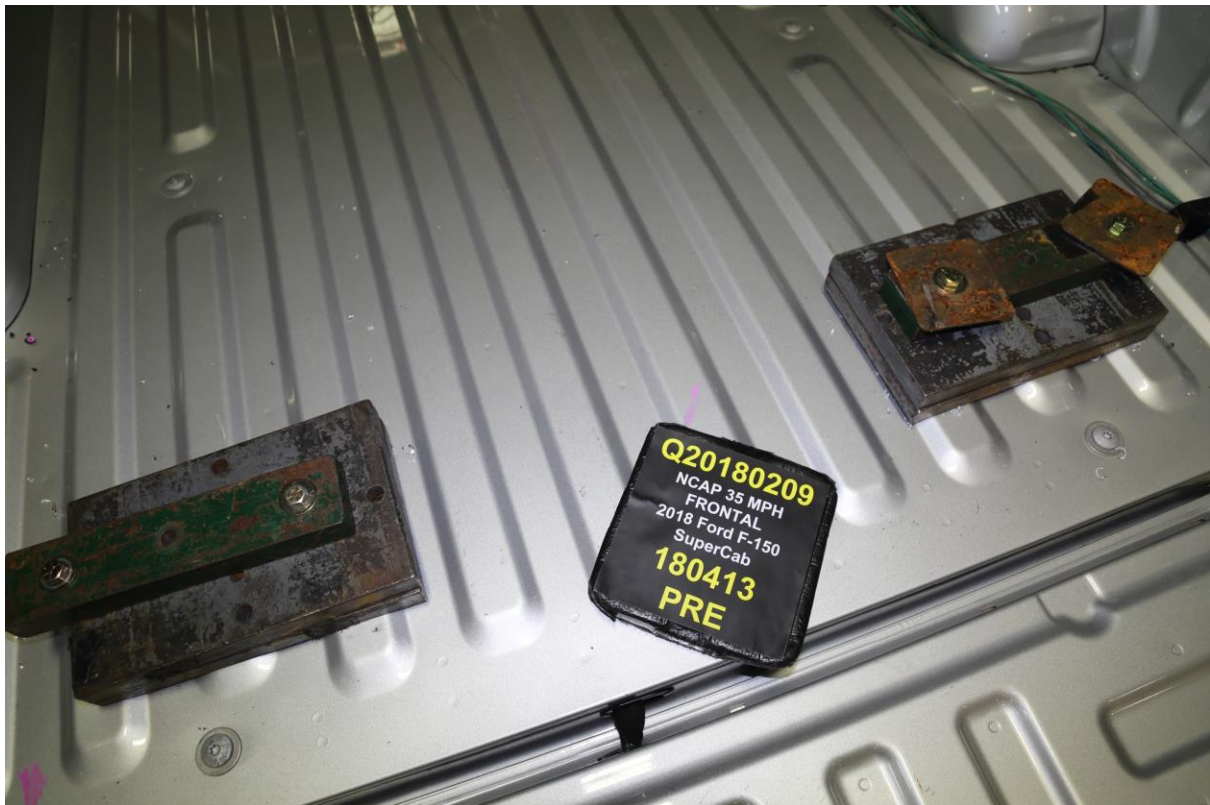
067 Post-Test Passenger Dummy Face



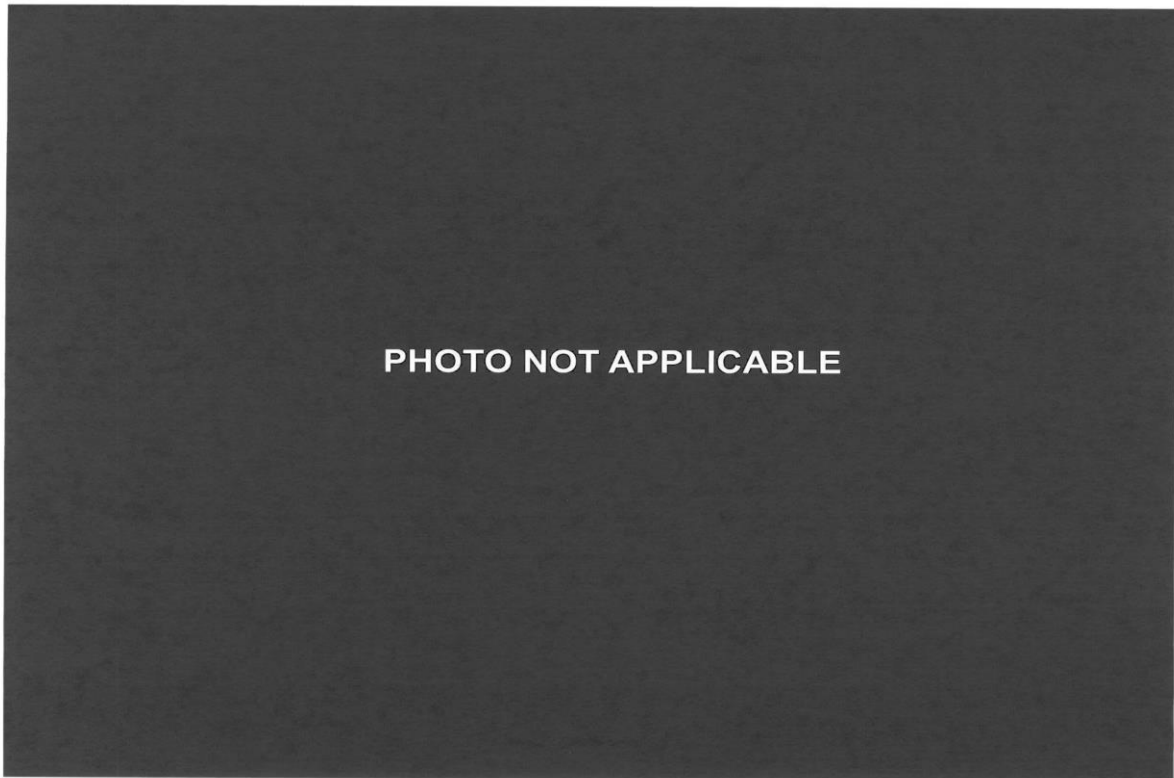
068 Post-Test Passenger Dummy Contact With Airbag



069 Post Test Passenger Dummy Contact With Headrest



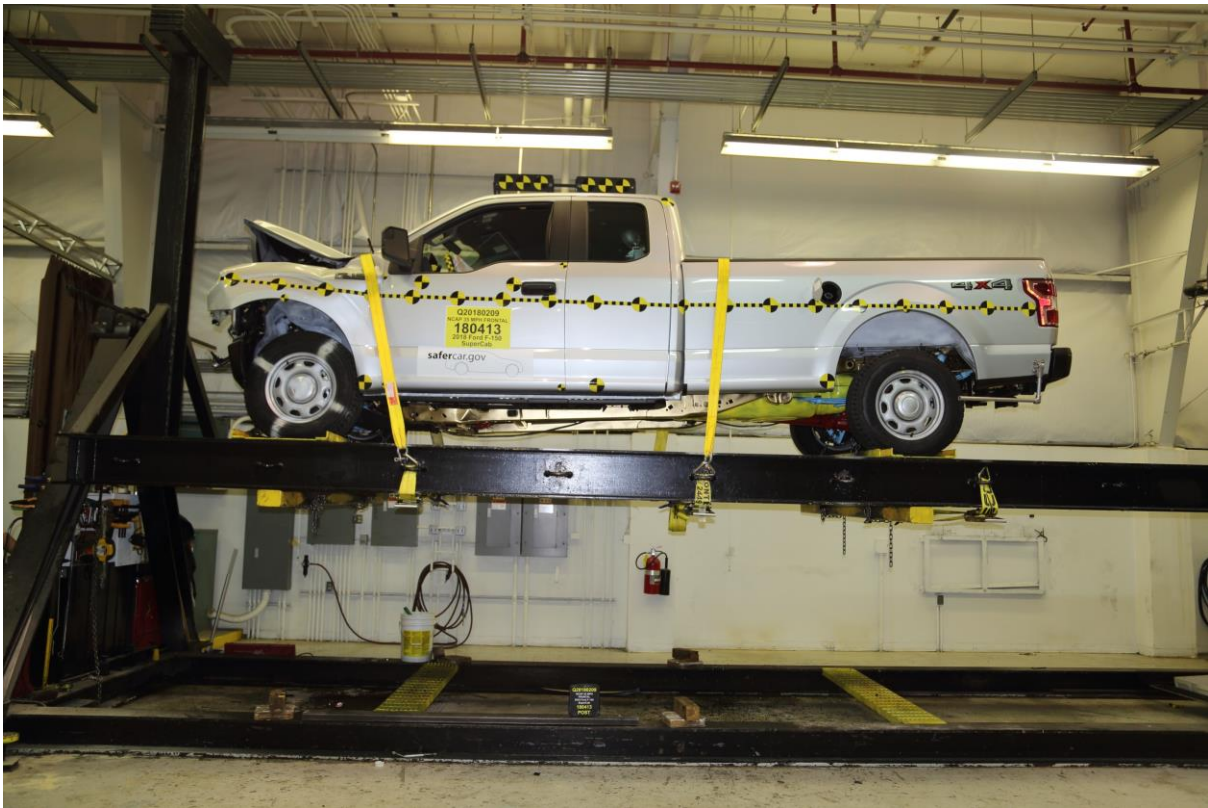
070 Photograph of Ballast Installed in Vehicle



071 Post-Test Stoddard Spillage Location View



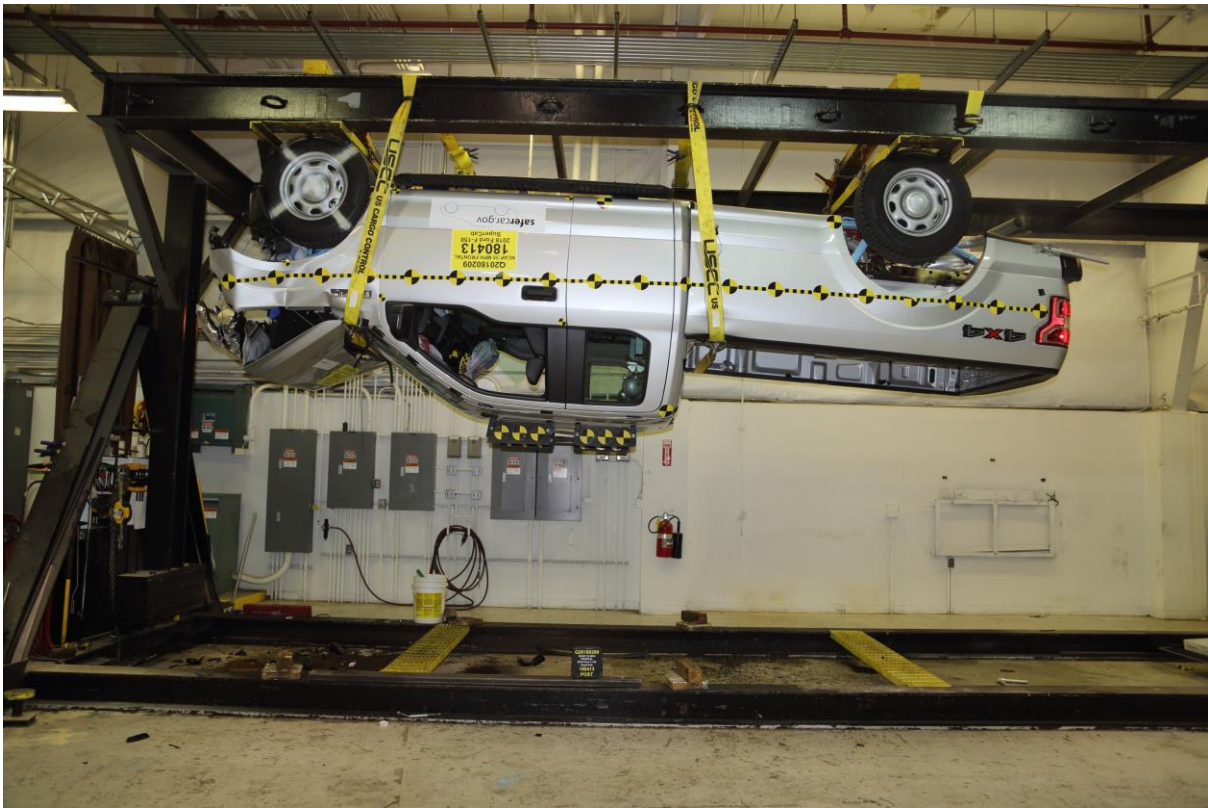
072 Post-Test Speed Trap Readout



073 Vehicle at 0° on Static Rollover Device



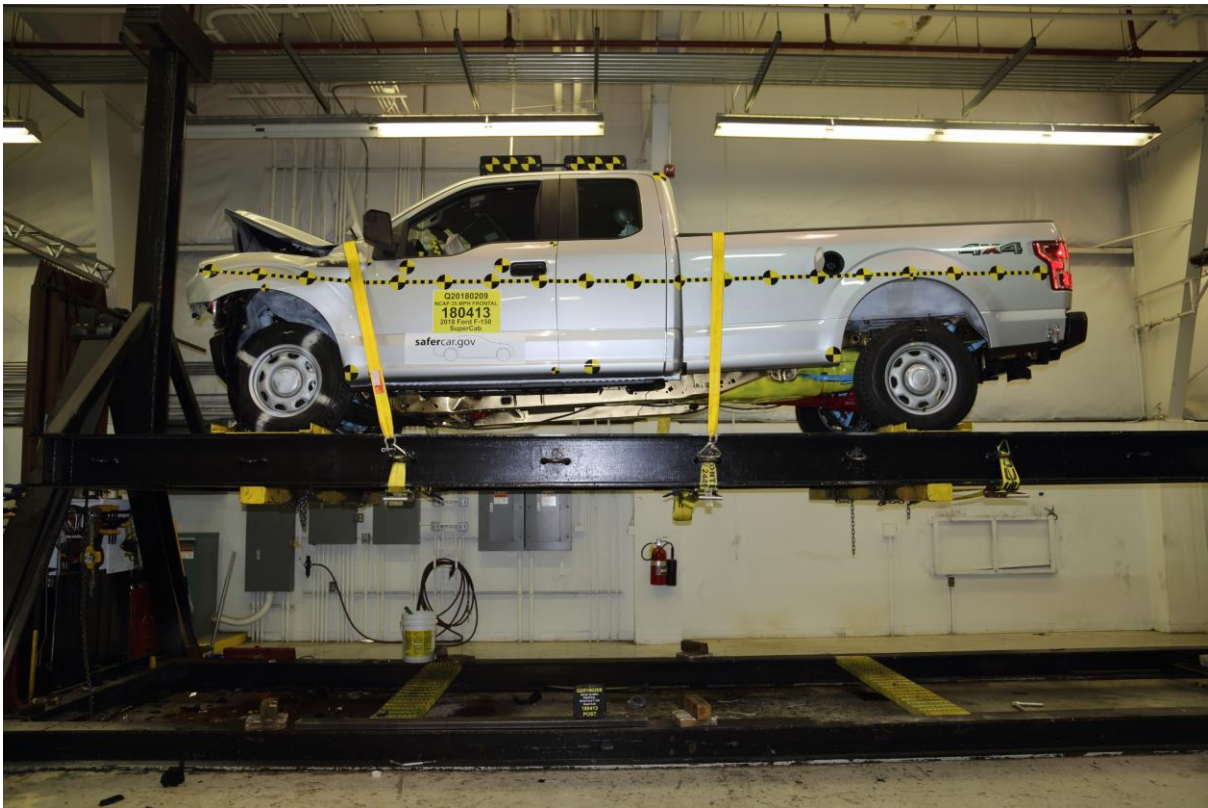
074 Vehicle at 90° on Static Rollover Device



075 Vehicle at 180° on Static Rollover Device



076 Vehicle at 270° on Static Rollover Device



077 Vehicle at 360° on Static Rollover Device



078 2018 Ford F-150 SuperCab Frontal Impact Event

Ford		VEHICLE DESCRIPTION		JK C20767		EPA DOT Fuel Economy and Environment		Gasoline Vehicle	
Go Further ford.com		F-150 2019 F-150 4X4 SUPERCAB 163.7" WHEELBASE 3.5L V6 ECOBOOST ELEC 10-SPEED AUTO W/TOW MO		EXTERIOR INGOOT SILVER INTERIOR DARK GRAY CLOTH 40/20/40		18 MPG combined city/hwy 5.6 gallons per 100 miles		You spend \$3,250 more in fuel costs over 5 years compared to the average new vehicle.	
STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE									
EXTERIOR • DAYTIME RUNNING LIGHTS • EASY FUEL CAPLESS FILLER • FULLY BOXED STEEL FRAME • HALOGEN HEADLAMPS • HEADLAMPS - AUTOLAMP (ON/OFF) • LOCKING REMOVABLE TAILGATE • PICKUP BOX TIE DOWN HOOKS • REAR 175-SQUARE DOOR • TRAILER SWAY CONTROL • WIPERS - INTERMITTENT		INTERIOR • 60/40 FOLD-UP REAR BENCH SEAT • A/C W/MANUAL CLIMATE CONTROL, SINGLE ZONE • DUAL SURVIVORS • ILLUMINATED ENTRY • OUTSIDE TEMP DISPLAY • POWERPOINTS • TILT/TELESCOPE STR COLUMN		FUNCTIONAL • 4-WHEEL DISC BRAKES W/ABS • AUTO START STOP TECH • CURVE CONTROL • DYNAMIC HITCH ASSIST • ELECT 4M4 SHIFTER-ON-FLY • ELECTRIC-ASSIST PARK BRAKE • FADE-TO-OFF INTERIOR LIGHT • FAIL-SAFE COOLING SYSTEM • GAS-CHARGED SHOCKS • HILL START ASSIST • MANUAL FOLD MIRRORS • OUTBOARD MNTD REAR SHOCKS • PWR RACK AND PINION STEER • REAR VIEW CAMERA • SELECTSHIFT TRANSMISSION		SAFETY/SECURITY • ADVANCETRAC WITH RSC • AIRBAGS - FRONT SEAT MOUNTED SIDE IMPACT • AIRBAGS - SAFETY CANOPY SIDE CURTAIN • CTR HIGH MOUNT STOP LAMP • SOS POST CRASH ALERT SYS • TIRE PRESSURE MONITOR SYS WARRANTY • 3YR/50,000 BUMPER / BUMPER • 5YR/60,000 POWERTRAIN • 5YR/60,000 ROADSIDE ASSIST			
INCLUDED ON THIS VEHICLE EQUIPMENT GROUP 101A • XL SERIES • XL POWER EQUIPMENT GROUP • CRUISE CONTROL OPTIONAL EQUIPMENT/OTHER 3.5L V6 ECOBOOST 17"X57"X76"18" BOW ALL-TERRAIN 7600M GVWR PACKAGE FRONT LICENSE PLATE BRACKET BLACK PLATFORM RUNNING BOARDS PRO TRAILER BACKUP ASSIST SYNC MAX TRAILER TOW PACKAGE INTEGRATED TRAILER BRAKE CONT AM/FM SINGLE CD FOX LAMPS HEAVY-DUTY PAYLOAD PACKAGE 3.73 ELECTRONIC LOCK RR AXLE 36GAL EXTENDED RANGE FUEL TAN 17" SILVER STEEL HEAVY-DUTY WHL		(MSRP) 2,255.00 NO CHARGE 250.00 1,195.00 140.00 1,500.00		PRICE INFORMATION BASE PRICE TOTAL OPTIONS/OTHER TOTAL VEHICLE & OPTIONS/OTHER DESTINATION & DELIVERY TOTAL BEFORE DISCOUNTS XL MID DISCOUNT TOTAL SAVINGS		(MSRP) \$37,150.00 \$,940.00 43,090.00 1,290.00 44,380.00 - 750.00 750.00		Annual fuel cost \$2,000 Fuel Economy & Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only) 1 3 10 1 5 10 Best Best	
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. 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									
SOLD TO Mathews Ford, Inc. P.O. BOX 4220 Newark, OH 43058		47B 539 RAMP ONE CW07		DEALER NO. 47B 539		TOTAL MSRP \$43,635.00		40 YEARS FORD F-SERIES AMERICA'S BEST SELLING TRUCKS	
SHIP TO (if other than SOLD TO) SHIP THROUGH		RAMP TWO METHOD OF TRANSIT CONVOY		FINAL ASSEMBLY PLANT KANSAS CITY ITEM #1: 47-0652 QIT 2 H9302 N RB 2X 815 001737 08 30 17		This label is affixed pursuant to the Federal Automobile Information Disclosure Act. Gasoline, License, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless listed above.		Scan this code to experience this vehicle or test 1F1FX1EG8JKC20767 to 48028 or Visit ford.com/windowsdealer Standard messaging & data plan rates may apply.	
Insist on Ford Protect! The only extended service plan fully backed by Ford and honored at every Ford dealership in the U.S., Canada and Mexico. See your Ford dealer for additional details, or visit www.FordOwner.com for more information.									
Choose the vehicle you want. Whether you decide to lease or finance, you'll find the choices that are right for you. See your Ford Dealer for details or visit www.FordCredit.com.									

079 Monroney Label Photograph

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

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

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

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

Passenger Upper Neck Moment X
Passenger Upper Neck Moment Z
Passenger Chest X Acceleration Redundant
Passenger Chest Y Acceleration Redundant
Passenger Chest Z Acceleration Redundant
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Left Femur Force Redundant
Passenger Right Femur Force Redundant
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Left Upper Tibia Force Z
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Shoulder Belt Force
Passenger Lap Belt Force
Left Rear Seat Crossmember X
Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Left Rear Seat Crossmember X Redundant
Right Rear Seat Crossmember X Redundant
Vehicle Engine Top X
Vehicle Engine Bottom X
Load Cell Barrier Forces and Moments

NHTSA

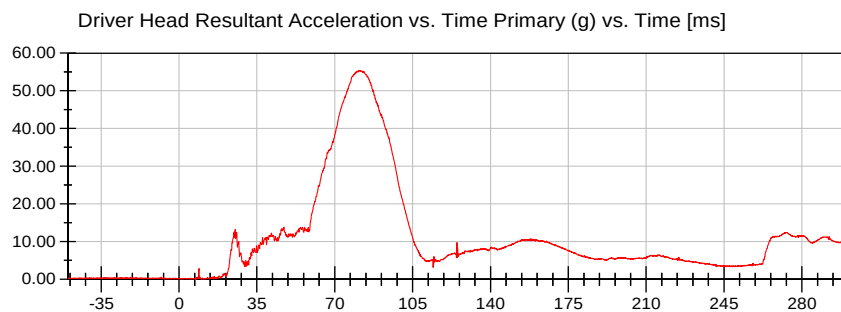
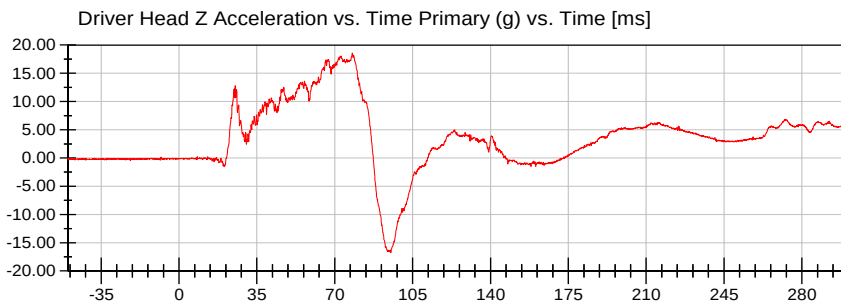
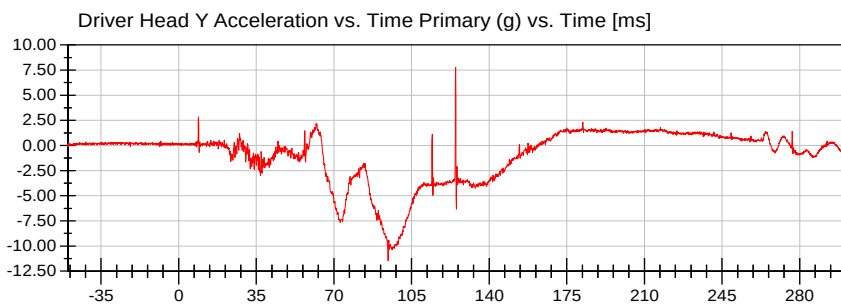
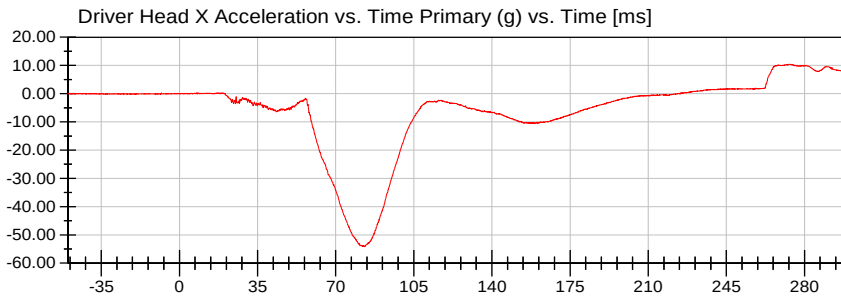
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



NHTSA

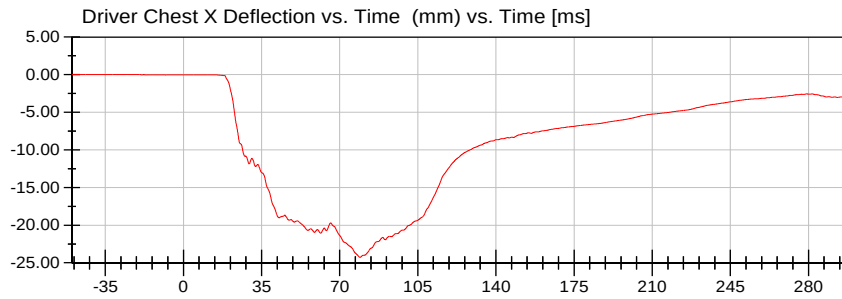
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



<Max>

0.02 mm at -35.52 ms

<Min>

-24.28 mm at 79.20 ms

CFC_600



NHTSA

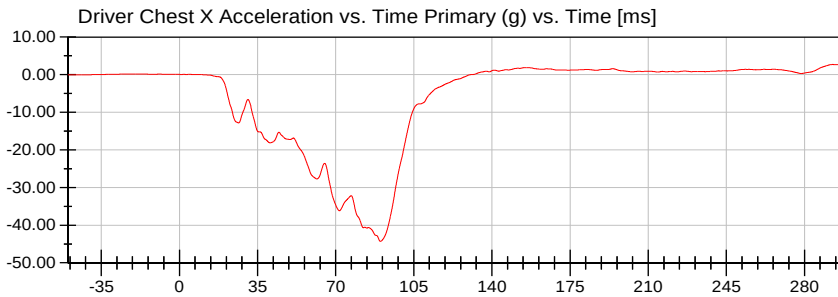
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



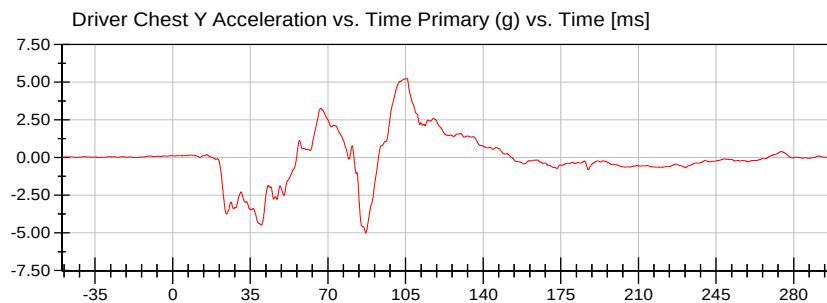
<Max>

3.12 g at 300.00 ms

<Min>

-44.31 g at 90.08 ms

CFC_180



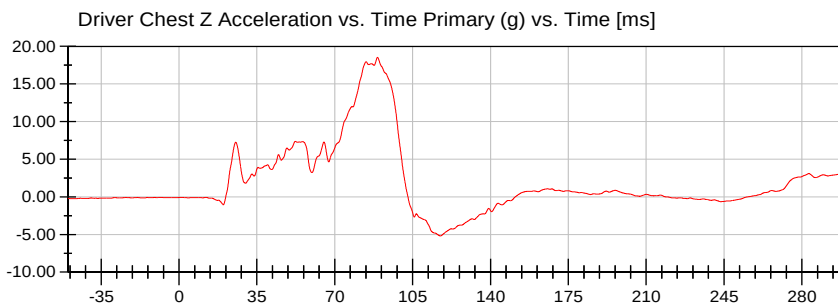
<Max>

5.25 g at 105.68 ms

<Min>

-5.00 g at 87.12 ms

CFC_180



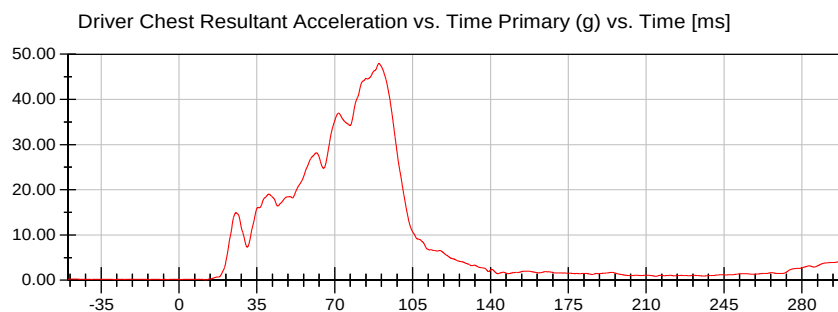
<Max>

18.54 g at 89.20 ms

<Min>

-5.18 g at 117.52 ms

CFC_180



<Max>

47.95 g at 89.92 ms

<Min>

0.09 g at 12.00 ms

CFC_180



NHTSA

Test Lab: CTF

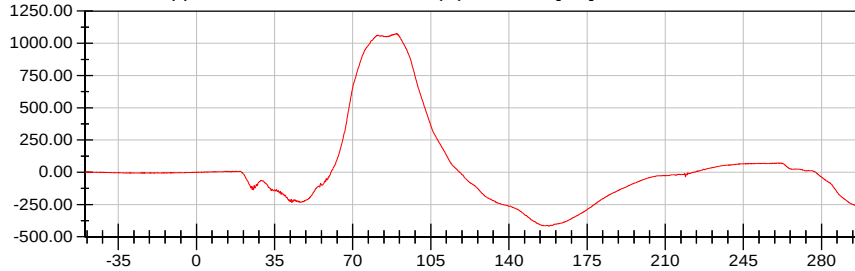
Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)

Driver Upper Neck Force X vs. Time (N) vs. Time [ms]



<Max>

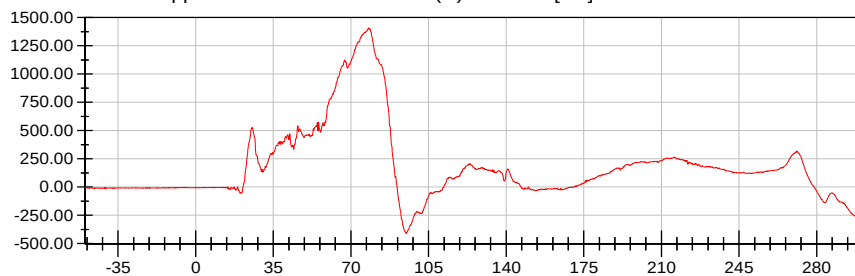
1,077.19 N at 89.84 ms

<Min>

-416.21 N at 157.76 ms

CFC_1000

Driver Upper Neck Force Z vs. Time (N) vs. Time [ms]



<Max>

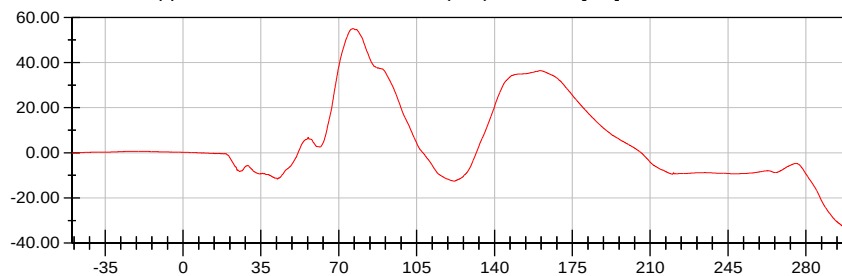
1,409.23 N at 77.92 ms

<Min>

-410.35 N at 94.88 ms

CFC_1000

Driver Upper Neck Moment Y vs. Time (Nm) vs. Time [ms]



<Max>

54.99 Nm at 76.40 ms

<Min>

-35.15 Nm at 300.00 ms

CFC_600





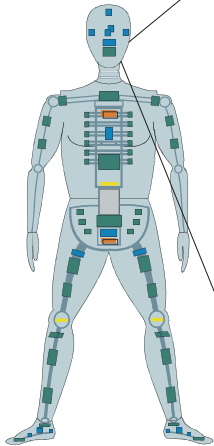
2018 Ford F-150 SuperCab NCAP 35 mph Frontal Impact Neck Injury Predictor (NIJ)

Date: 04/13/2018
Time: 13:58

Customer: NHTSA

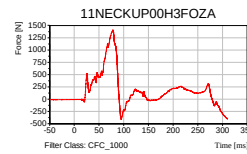
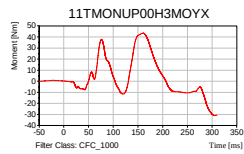
Test Number: Q20180209

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

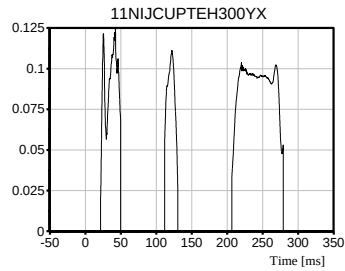


Dummy: HIII 50th Male
Seating Position:
Driver

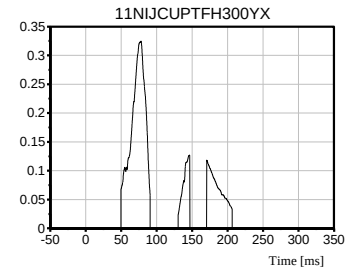
NIJ Source Code: (Fz/Fzc)+(Myc/Myc)



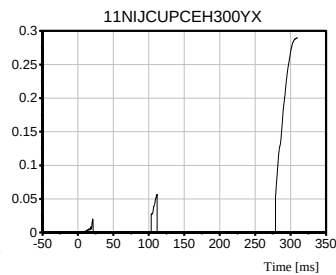
TRC Inc. Test Lab: CTF
Test Number: 180413



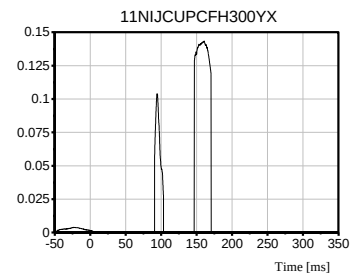
Max [NTE] 0.1242 at 42.40 ms



Max [NTF] 0.3249 at 77.92 ms



Max [NCE] 0.2901 at 310.00 ms



Max [NCF] 0.1435 at 160.56 ms

NHTSA

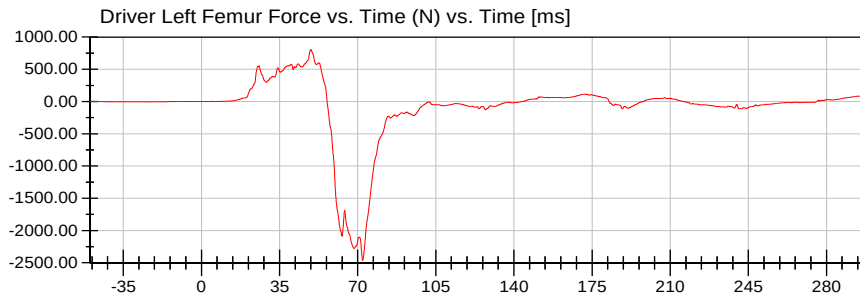
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



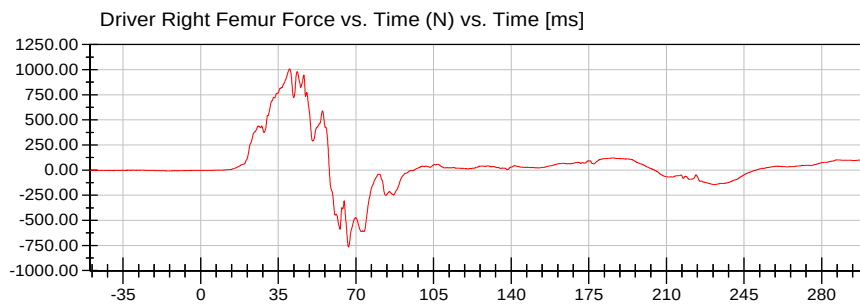
<Max>

806.75 N at 48.96 ms

<Min>

-2,467.07 N at 72.24 ms

CFC_600



<Max>

1,007.85 N at 40.16 ms

<Min>

-766.01 N at 66.64 ms

CFC_600



NHTSA

Test Lab: CTF

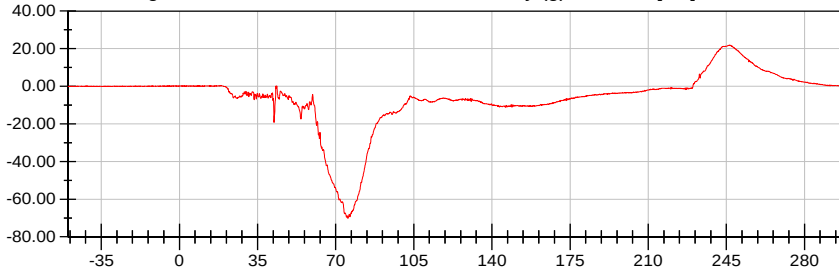
Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)

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



<Max>

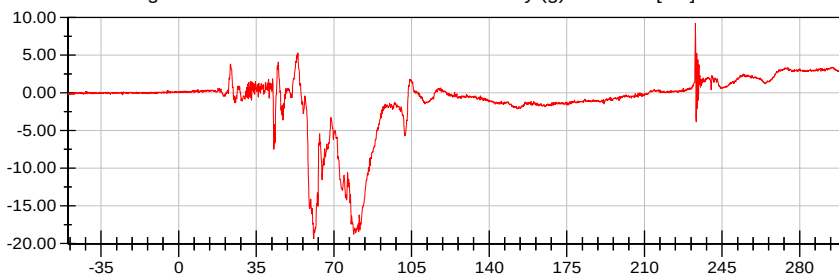
21.93 g at 246.40 ms

<Min>

-70.22 g at 75.52 ms

CFC_1000

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



<Max>

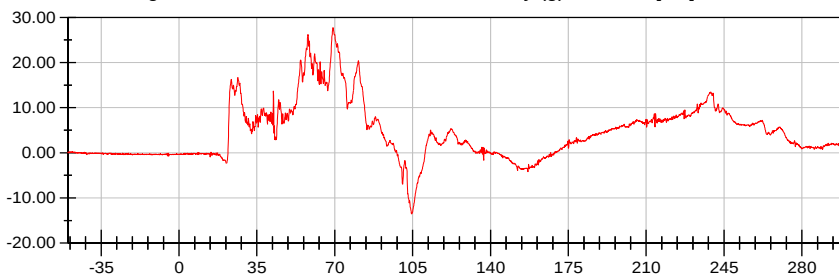
9.23 g at 233.04 ms

<Min>

-19.34 g at 60.96 ms

CFC_1000

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



<Max>

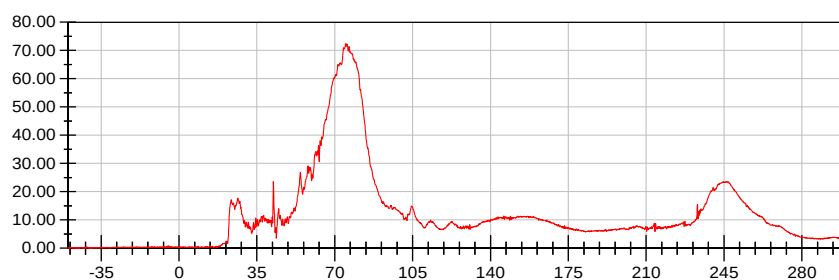
27.71 g at 69.20 ms

<Min>

-13.54 g at 104.56 ms

CFC_1000

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



<Max>

72.38 g at 74.96 ms

<Min>

0.01 g at -47.04 ms

CFC_1000



NHTSA

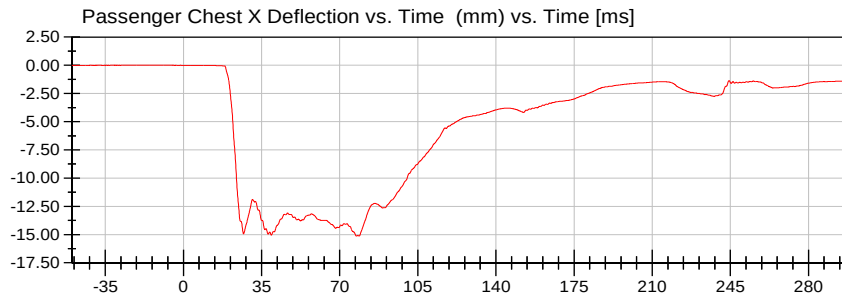
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



<Max>

0.01 mm at -12.24 ms

<Min>

-15.13 mm at 77.52 ms

CFC_600



NHTSA

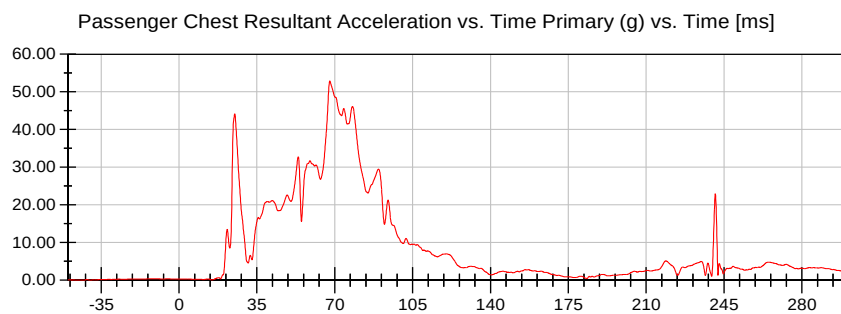
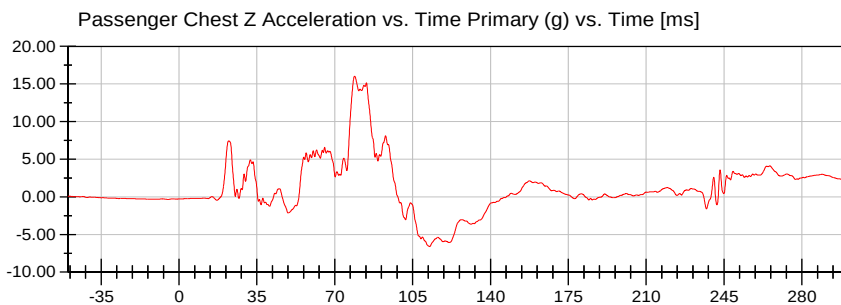
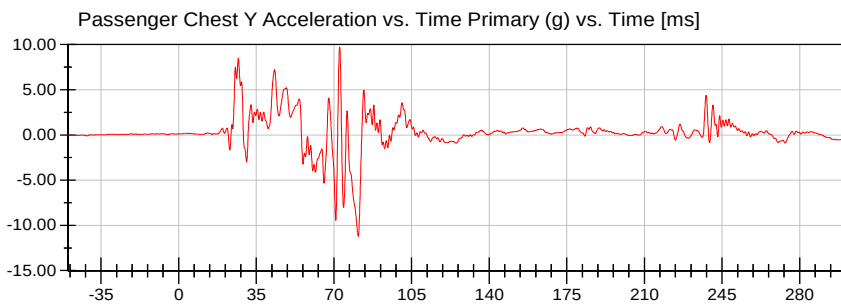
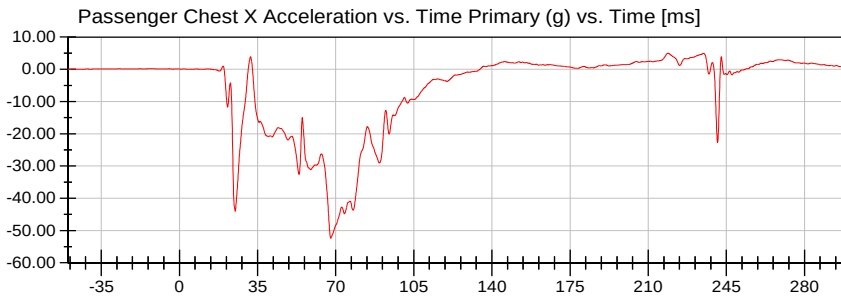
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



NHTSA

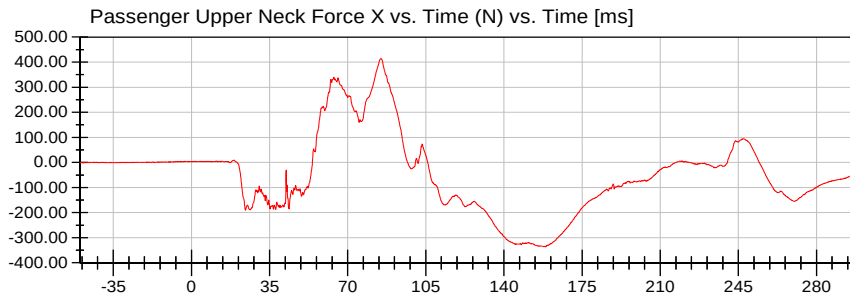
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



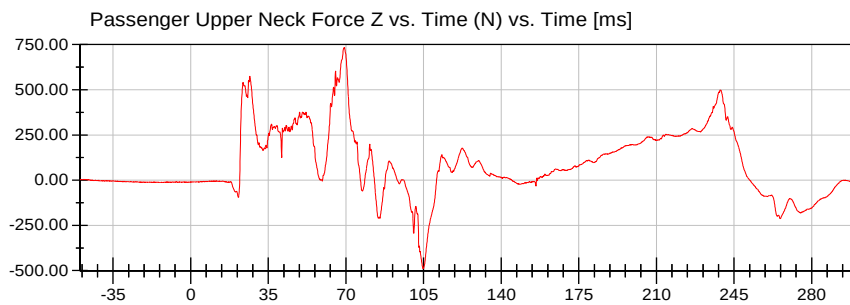
<Max>

413.87 N at 84.88 ms

<Min>

-336.14 N at 158.56 ms

CFC_1000



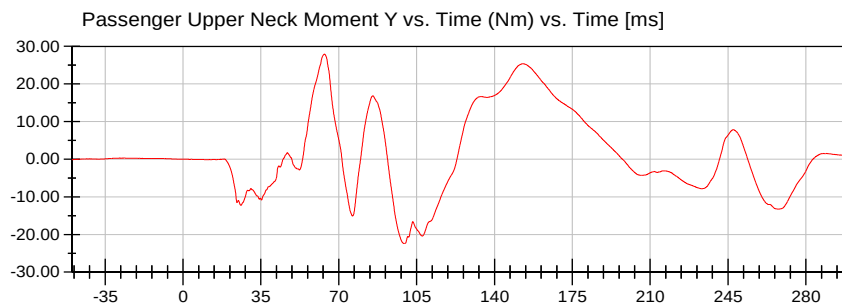
<Max>

733.66 N at 69.28 ms

<Min>

-488.86 N at 104.88 ms

CFC_1000



<Max>

27.97 Nm at 63.68 ms

<Min>

-22.41 Nm at 99.36 ms

CFC_600





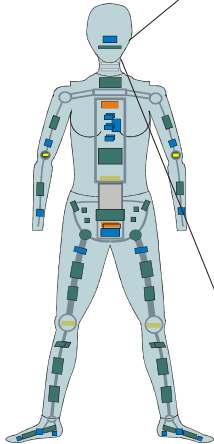
2018 Ford F-150 SuperCab NCAP 35 mph Frontal Impact Neck Injury Predictor (NIJ)

Date: 04/13/2018
Time: 13:58

Customer: NHTSA

Test Number: Q20180209

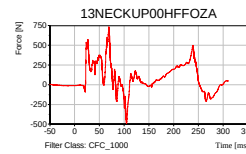
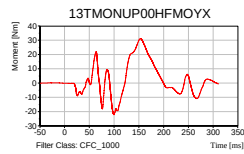
Test Orientation = Frontal
Fzc(Tension) = 4287
Fzc(Compression) = 3880
Myc(Extension) = 67
Myc(Flexion) = 155



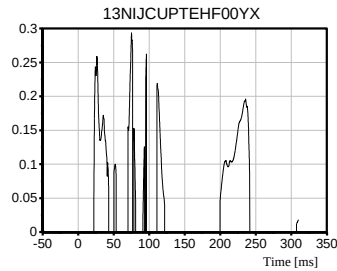
Dummy: HIII 5th Female
Seating Position:

Right Front Passenger

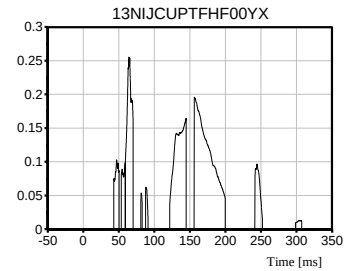
NIJ Source Code: (Fz/Fzc)+(Myc/Myc)



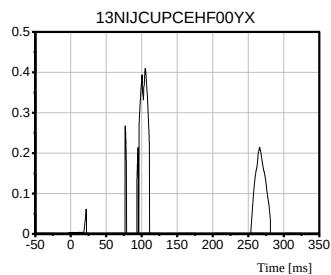
TRC Inc. Test Lab: CTF
Test Number: 180413



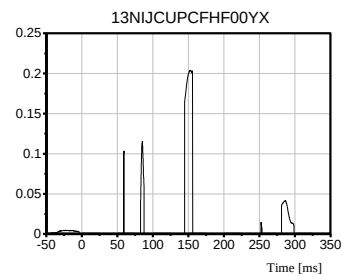
Max [NTE] 0.2933 at 75.12 ms



Max [NTF] 0.2555 at 64.40 ms



Max [NCE] 0.4103 at 104.96 ms



Max [NCF] 0.2042 at 152.24 ms

NHTSA

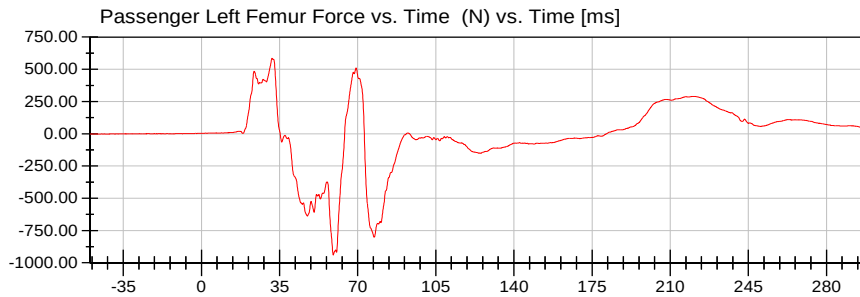
Test Lab: CTF

Test Number: 180413 (Q20180209)

Test Date: 04/13/2018

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

Position #2 Hybrid III Small Adult Female (070)



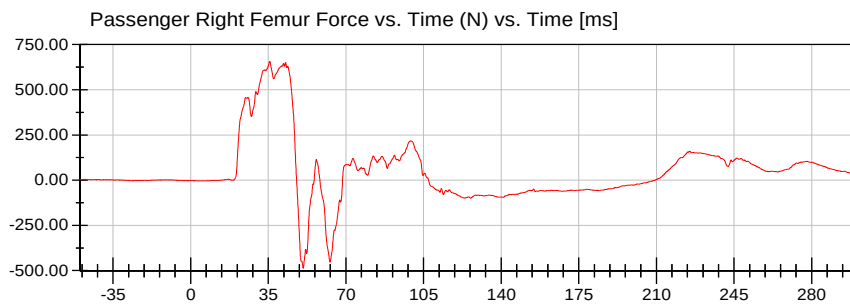
<Max>

584.96 N at 31.60 ms

<Min>

-939.12 N at 59.04 ms

CFC_600



<Max>

656.17 N at 35.60 ms

<Min>

-486.62 N at 50.80 ms

CFC_600

TRC

APPENDIX C
DUMMY CALIBRATION AND PERFORMANCE VERIFICATION

Pre-Test Calibration Sheets

Driver S/N 037

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 037
Calibration No. 48

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	513	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	146	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	337	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	494	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	227	Yes
P	Foot Length	251.5 - 266.7	264	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	96	Yes
Y	Chest Circumference	970.3 - 1000.8	992	Yes
Z	Waist Circumference	835.7 - 866.1	864	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Revised 8/10/12



Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 48-1

Test Date: 4/3/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	249.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	2.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: N/A

Skull S/N: N/A

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

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04.03.2018 06:44:29 579

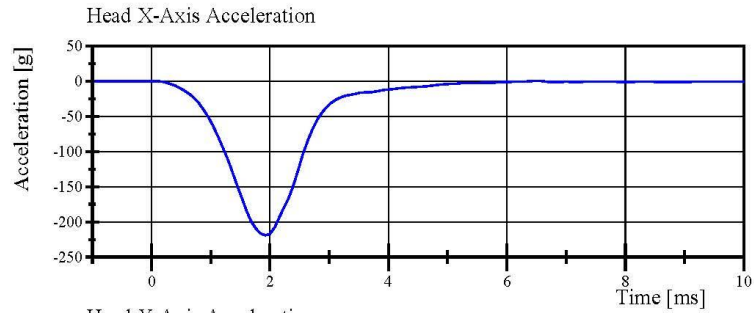


Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 48-1

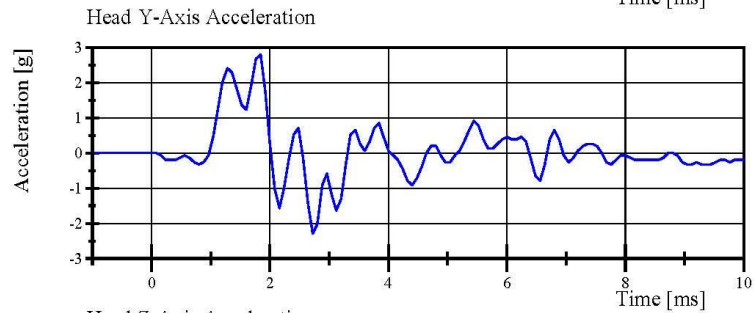
Test Date: 4/3/2018



Filter Class: CFC_1000

Max: 0.5 g at 6.5 ms

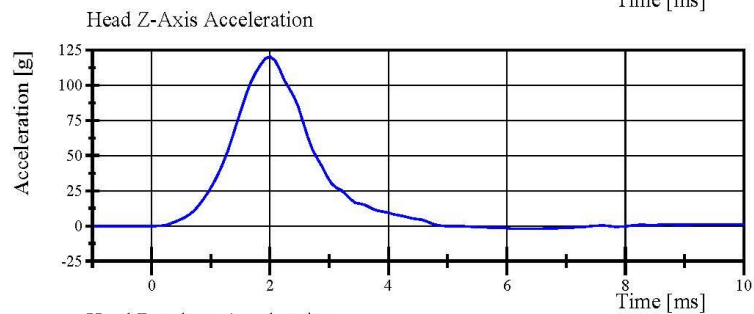
Min: -219.1 g at 1.9 ms



Filter Class: CFC_1000

Max: 2.8 g at 1.8 ms

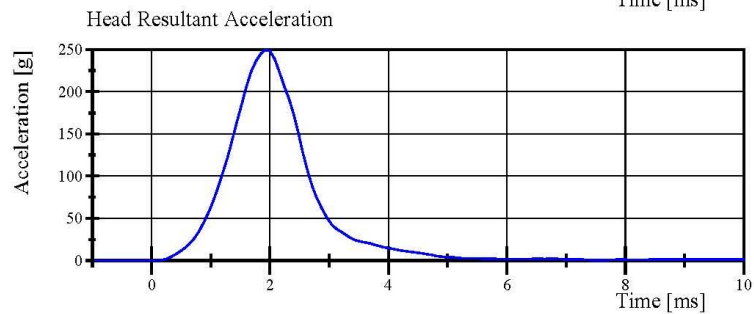
Min: -2.3 g at 2.7 ms



Filter Class: CFC_1000

Max: 120.4 g at 2.0 ms

Min: -2.1 g at 6.4 ms



Filter Class: CFC_1000

Max: 249.3 g at 1.9 ms

Min: 0.0 g at -1.0 ms

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

04.03.2018 06:45:07 579



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Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 48-12

Test Date: 4/12/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.931 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.6 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.01 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.25 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.40 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.40 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-68.5 °	Yes
Time of Peak	57 - 64 ms	61.2 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	113 - 128 ms	122.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	99.7 N·m	Yes
Time of Peak	47 - 58 ms	54.7 ms	Yes
Total Neck Occipital Condyles Moment			
Decay to 0 N·m	97 - 107 ms	103.2 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

Nodding Block's S/N's:

- **Front** - N/A

- **Rear** - N/A

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

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04.12.2018 13:17:05 1829

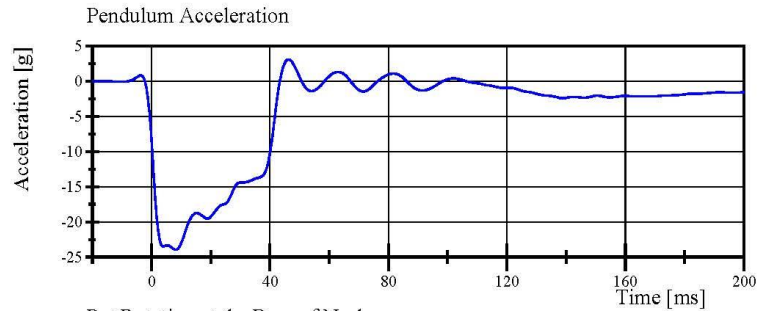


Transportation Research Center Inc.

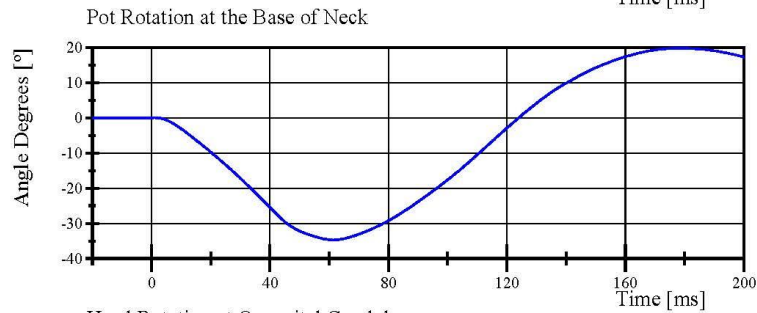
Neck Flexion

HIII 50th Serial No. 037 Certification No. 48-12

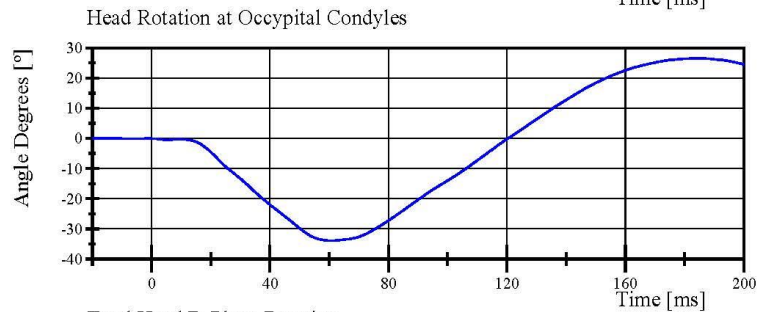
Test Date: 4/12/2018



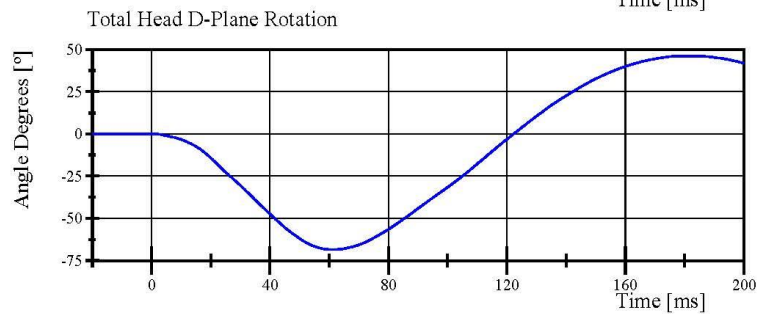
Filter Class: CFC_60
Max: 3.1 g at 46.3 ms
Min: -24.0 g at 8.2 ms



Filter Class: CFC_60
Max: 19.8 ° at 178.1 ms
Min: -34.7 ° at 61.4 ms



Filter Class: CFC_60
Max: 26.5 ° at 184.6 ms
Min: -33.8 ° at 60.8 ms



Filter Class: CFC_60
Max: 46.2 ° at 181.2 ms
Min: -68.5 ° at 61.2 ms

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

04.12.2018 13:17:59 1829



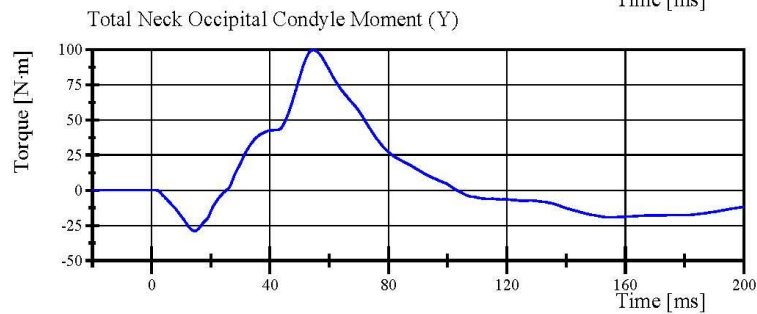
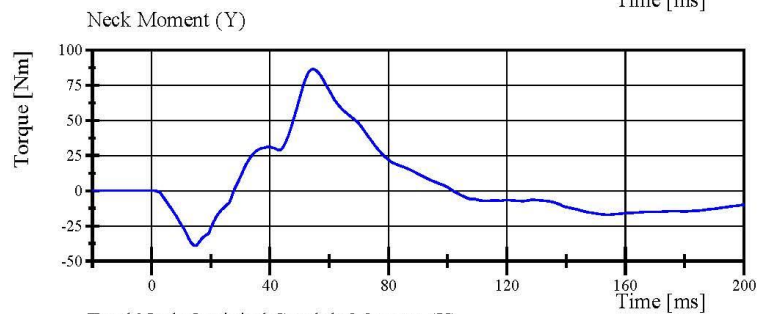
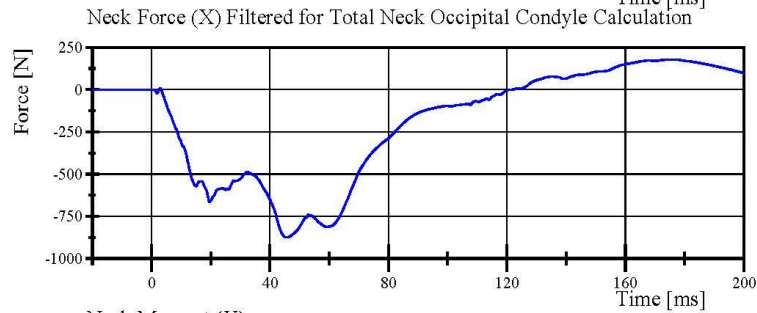
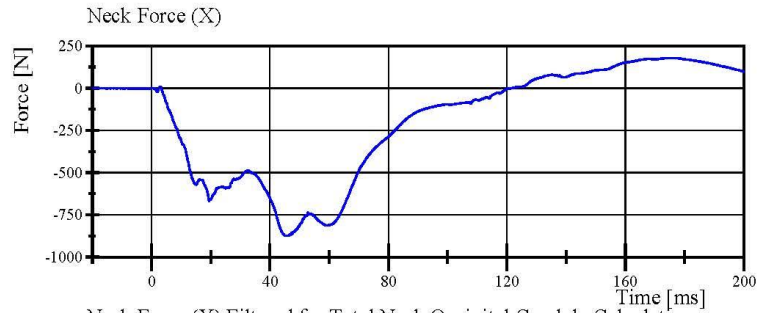
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Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 48-12

Test Date: 4/12/2018



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

04.12.2018 13:17:59 1829



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Transportation Research Center Inc.

Neck Extension

HIH 50th Serial No. 037 Certification No. 48-24

Test Date: 4/12/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.974 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	38.6 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	20.34 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.06 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.37 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.37 g	Yes
Total Head D-Plane Rotation Peak	81 - 106 °	94.6 °	Yes
Time of Peak	72 - 82 ms	76.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	159.2 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-53) - (-80) N·m	-72.3 N·m	Yes
Time of Peak	65 - 79 ms	71.9 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	147.0 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

Nodding Block's S/N's:

- Front - N/A

- Rear - N/A

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

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04.12.2018 15:12:11 3109

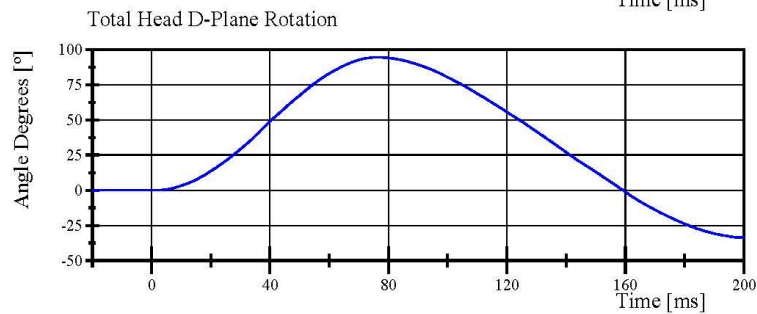
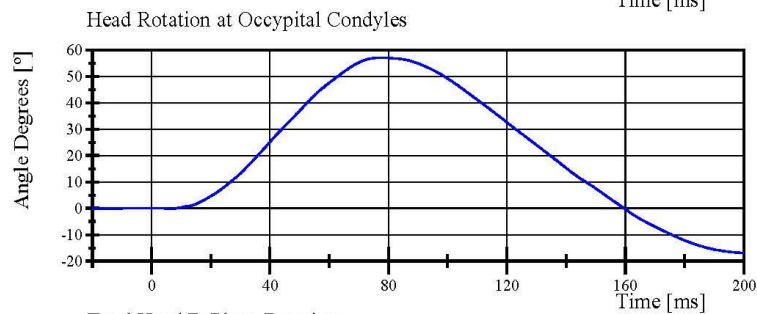
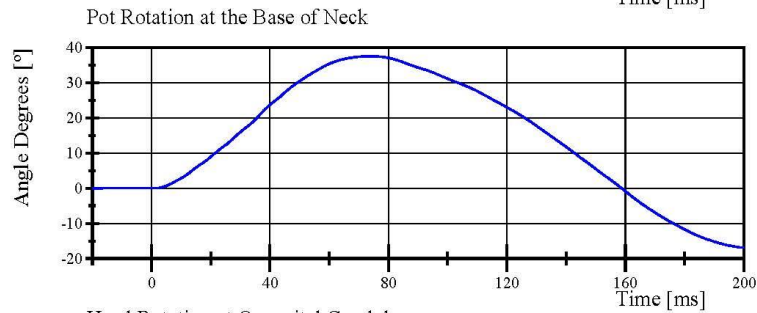
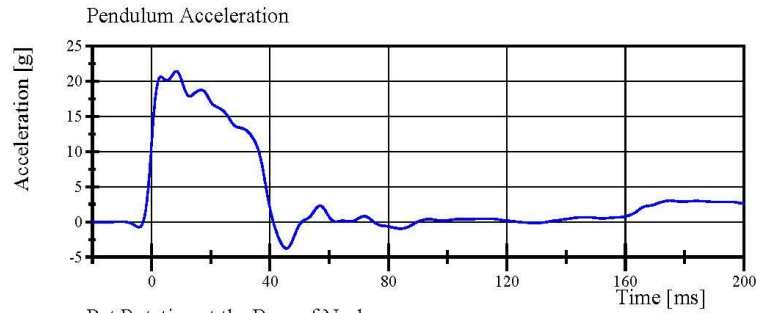


Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 48-24

Test Date: 4/12/2018



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

04.12.2018 15:13:28 3109



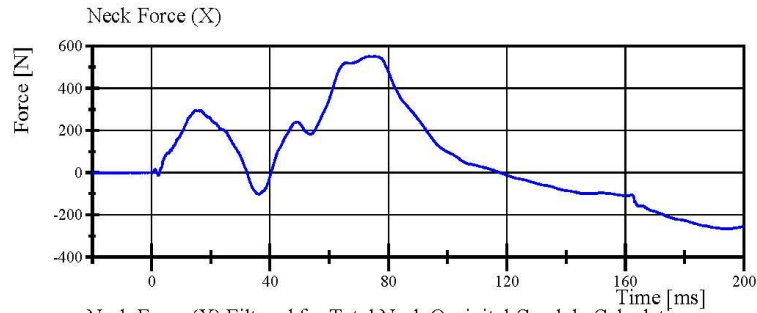
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Transportation Research Center Inc.

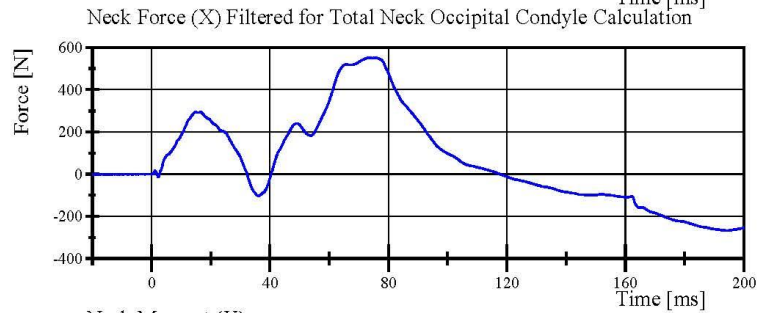
Neck Extension

HIII 50th Serial No. 037 Certification No. 48-24

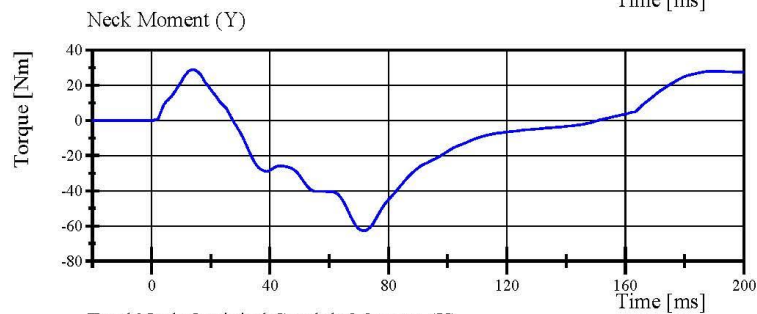
Test Date: 4/12/2018



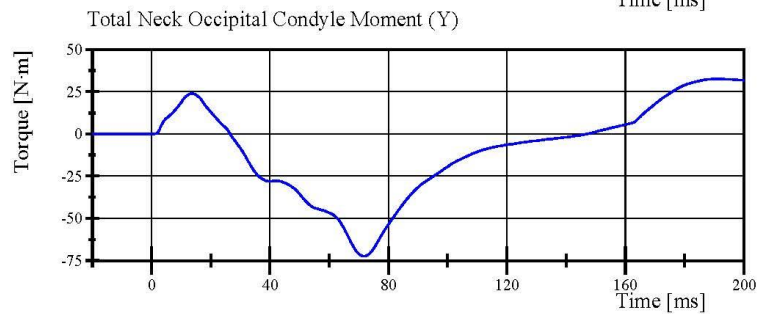
Filter Class: CFC_1000
Max: 552.9 N at 75.4 ms
Min: -266.7 N at 194.2 ms



Filter Class: CFC_600
Max: 552.5 N at 75.4 ms
Min: -266.4 N at 194.2 ms



Filter Class: CFC_600
Max: 28.9 Nm at 14.0 ms
Min: -62.7 Nm at 71.6 ms



Filter Class: Without_(Consta
Max: 32.6 N·m at 191.2 ms
Min: -72.3 N·m at 71.9 ms

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

04.12.2018 15:13:29 3109



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Transportation Research Center Inc.

Front Thorax

HIH 50th Serial No. 037 Certification No. 48-1

Test Date: 4/4/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.689 m/s	Yes
Probe Force Peak	(-5,160) - (-5,894) N	-5,434.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-70.26 mm	Yes
Internal Hysteresis	69 - 85 %	73.3 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: 2565

Rib Module #1 S/N: 178051-35 HI6550

Rib Module #2 S/N: 36 16526

Rib Module #3 S/N: 37 16543

Rib Module #4 S/N: 38 16538

Rib Module #5 S/N: 39 HI6530

Rib Module #6 S/N: 40 16548

Rear Rib Support S/N: N/A

Bib S/N: N/A

Sternum Plate S/N: N/A

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

04.04.2018 13:57:38 369



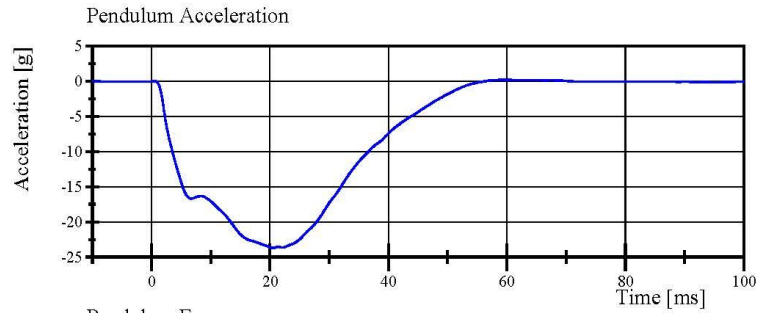
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Transportation Research Center Inc.

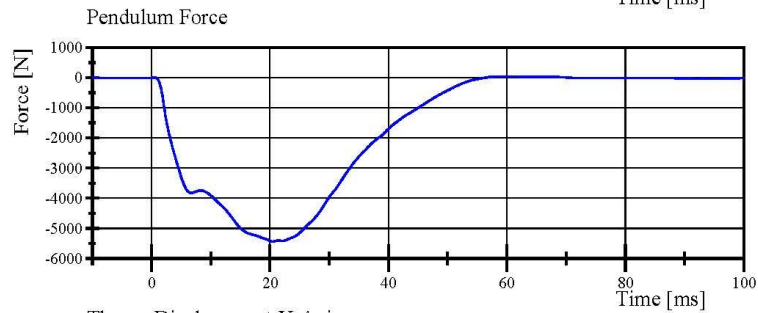
Front Thorax

HIH 50th Serial No. 037 Certification No. 48-1

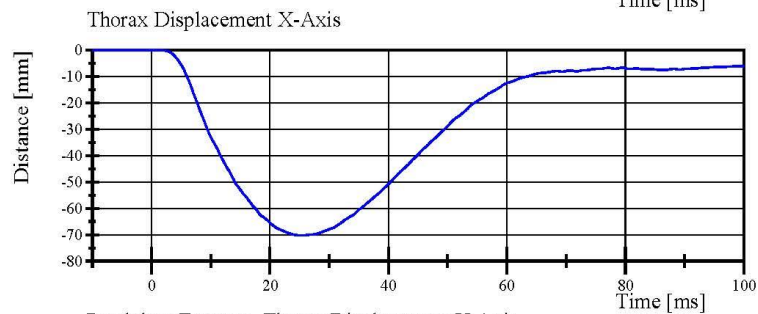
Test Date: 4/4/2018



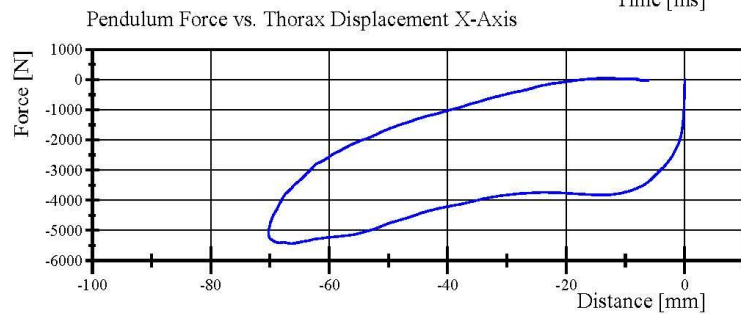
Filter Class: CFC_180
Max: 0.2 g at 59.2 ms
Min: -23.7 g at 20.5 ms



Filter Class: CFC_180
Max: 49.5 N at 59.2 ms
Min: -5,434.5 N at 20.5 ms



Filter Class: CFC_600
Max: 0.0 mm at -6.4 ms
Min: -70.3 mm at 25.4 ms



Filter Class: CFC_180
Max: 49.5 N at -13.5 mm
Min: -5,434.5 N at -66.4 mm

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

04.04.2018 13:58:48 369



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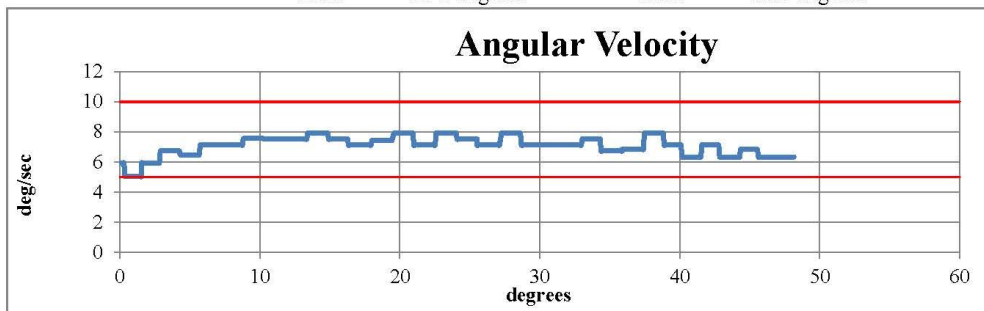
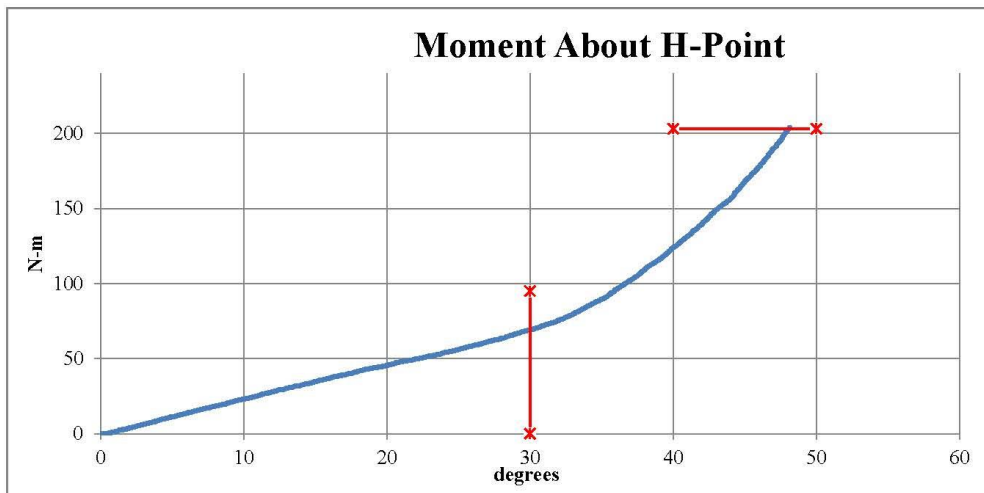
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion



Serial Number: 037 Date: 02-Apr-2018
Side Tested: Left Hip Time: 13:19
Test Number: 1

TEST PARAMETER	SPECIFICATION		TEST RESULTS		
Temperature	18.9	- 25.6	21.7 °C	Pass	
Humidity	10	- 70	37 %	Pass	
Moment at 30°	0	≤ 94.9	69.26 N-m	Pass	
Angle at 203 Nm	40	- 50	48.16 deg	Pass	
Average Velocity	5	- 10	7.06 deg/sec	Pass	



Comments:
Pelvis Skin S/N: N/A
Lumbar Spine S/N: 0551
Lumbar Cable S/N: N/A

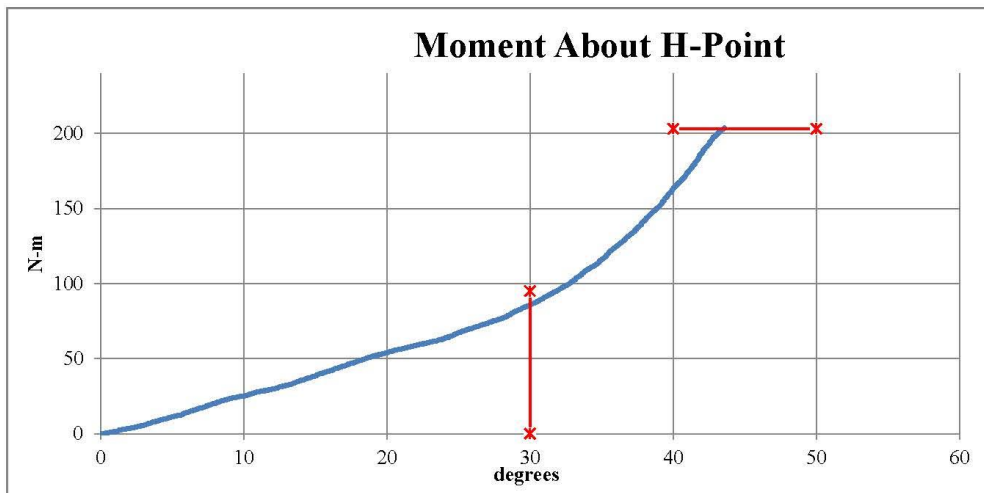
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

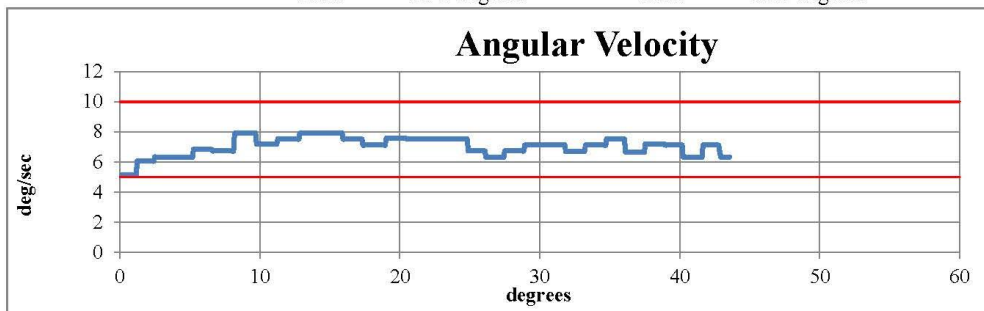


Serial Number: 037 Date: 02-Apr-2018
Side Tested: Right Hip Time: 14:23
Test Number: 1

TEST PARAMETER	SPECIFICATION		TEST RESULTS		
Temperature	18.9	- 25.6	21.7 °C	Pass	
Humidity	10	- 70	35 %	Pass	
Moment at 30°	0	≤ 94.9	85.83 N-m	Pass	
Angle at 203 Nm	40	- 50	43.57 deg	Pass	
Average Velocity	5	- 10	7.01 deg/sec	Pass	



Max: 7.91 deg/sec Min: 5.14 deg/sec



Comments:
Pelvis Skin S/N: N/A
Lumbar Spine S/N: 0551
Lumbar Cable S/N: N/A

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 48-2
Test Date: 4/2/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.097 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,427.18 N	Yes

Test meets specifications.

Condition: Used

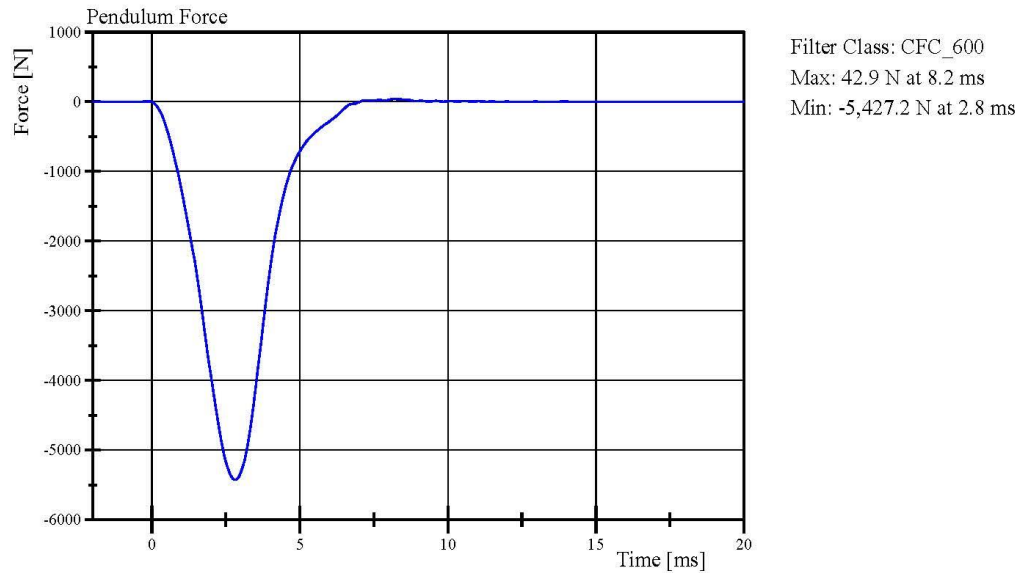
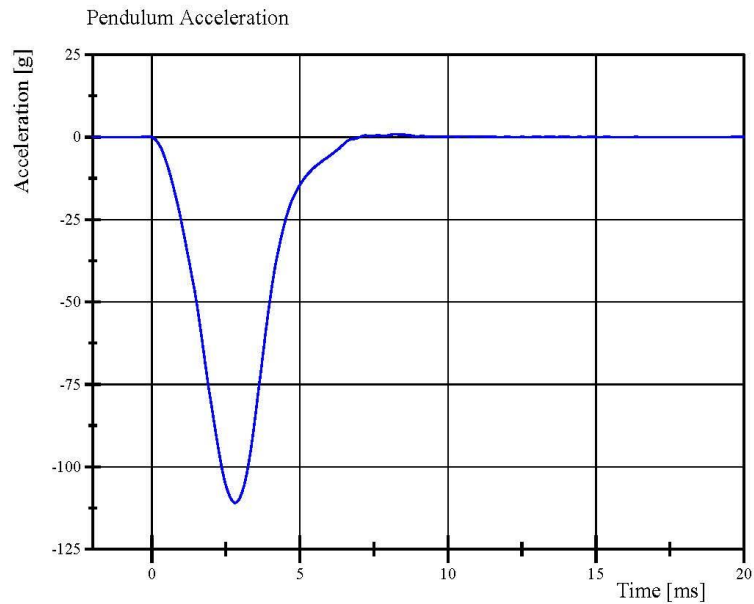
Comments:

Knee Skin S/N: 2672

Knee Insert S/N: N/A

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 48-2
Test Date: 4/2/2018



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

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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 48-2
Test Date: 4/2/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.099 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,587.11 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 3131

Knee Insert S/N: N/A

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

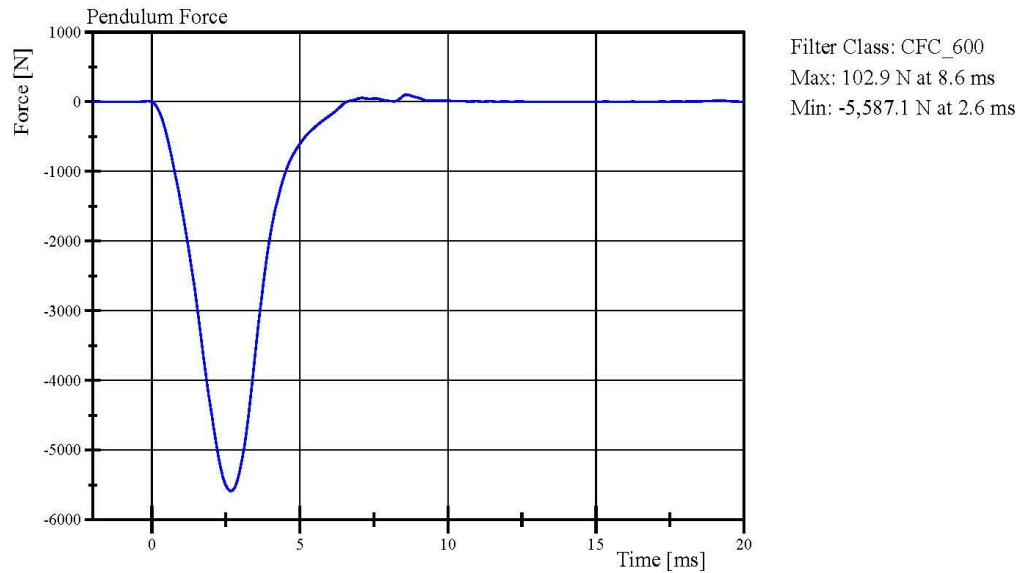
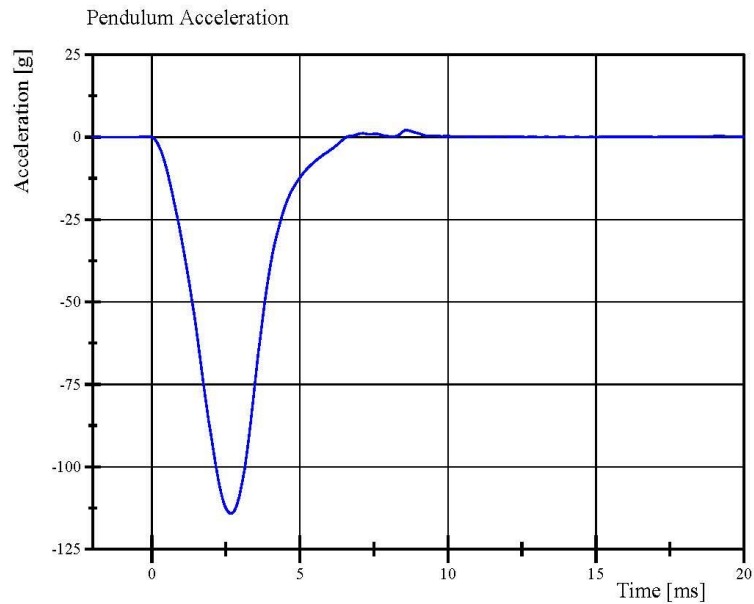
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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 48-2
Test Date: 4/2/2018



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

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Post-Test Calibration Sheets

Driver S/N 037

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 037
Calibration No. 49

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	513	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	147	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	337	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	494	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	226	Yes
P	Foot Length	251.5 - 266.7	264	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	96	Yes
Y	Chest Circumference	970.3 - 1000.8	991	Yes
Z	Waist Circumference	835.7 - 866.1	864	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 49-1

Test Date: 4/15/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	258.5 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-2.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: N/A

Skull S/N: N/A

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

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04.15.2018 14:06:35 579

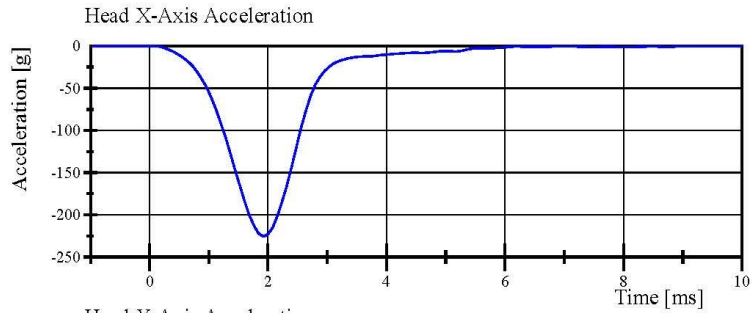


Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 49-1

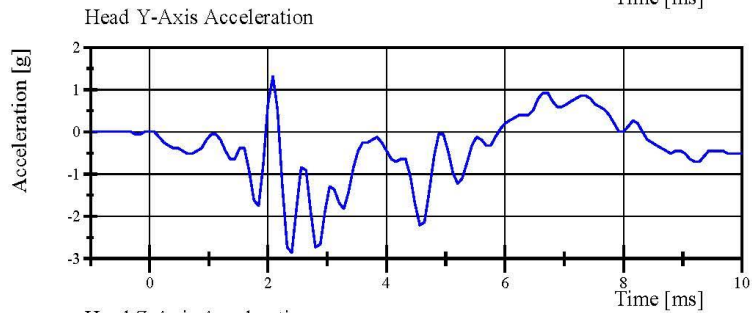
Test Date: 4/15/2018



Filter Class: CFC_1000

Max: -0.0 g at -1.0 ms

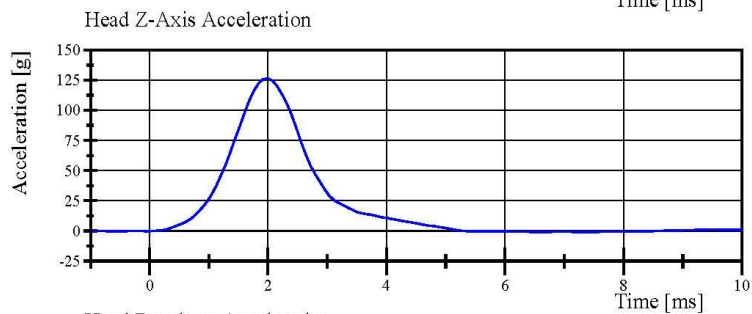
Min: -225.7 g at 1.9 ms



Filter Class: CFC_1000

Max: 1.3 g at 2.1 ms

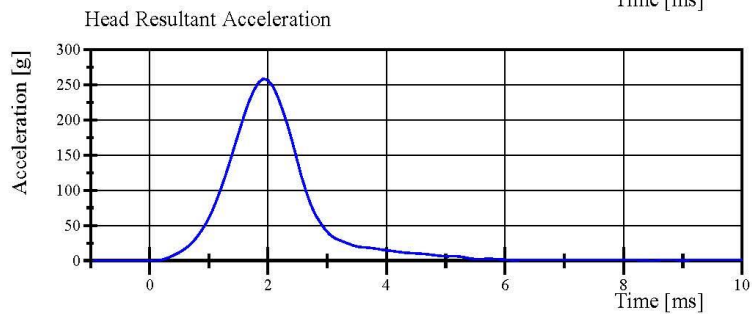
Min: -2.9 g at 2.4 ms



Filter Class: CFC_1000

Max: 126.5 g at 2.0 ms

Min: -1.0 g at 6.6 ms



Filter Class: CFC_1000

Max: 258.5 g at 1.9 ms

Min: 0.0 g at -0.7 ms

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

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Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 49-2

Test Date: 4/16/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.919 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.2 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.67 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.20 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.30 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.30 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-73.1 °	Yes
Time of Peak	57 - 64 ms	60.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	120.4 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88.1 - 108.4 N·m	98.10 N·m	Yes
Time of Peak	47 - 58 ms	54.4 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	104.4 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

Nodding Blocks:

Front S/N: N/A

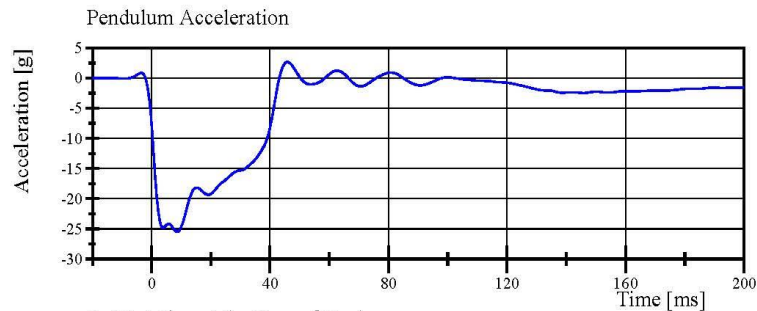
Rear S/N: N/A

Transportation Research Center Inc.

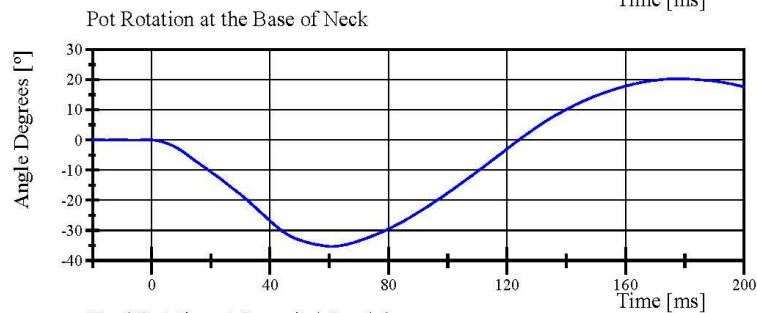
Neck Flexion

HIII 50th Serial No. 037 Certification No. 49-2

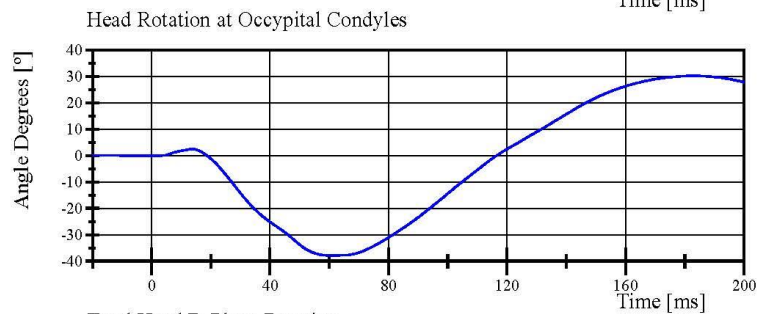
Test Date: 4/16/2018



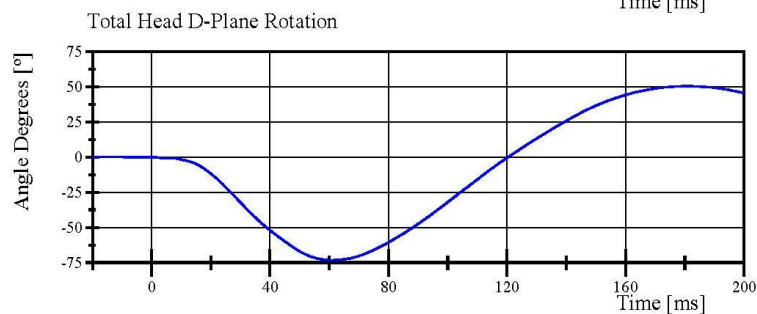
Filter Class: CFC_60
Max: 2.7 g at 45.9 ms
Min: -25.5 g at 8.7 ms



Filter Class: CFC_60
Max: 20.3 ° at 177.5 ms
Min: -35.2 ° at 60.7 ms



Filter Class: CFC_60
Max: 30.2 ° at 182.9 ms
Min: -37.9 ° at 60.9 ms



Filter Class: CFC_60
Max: 50.4 ° at 180.7 ms
Min: -73.1 ° at 60.8 ms

Specification Source: 78051-9904 User Manual HIII-50th FAA Male Rev B

04.16.2018 10:49:36 1828

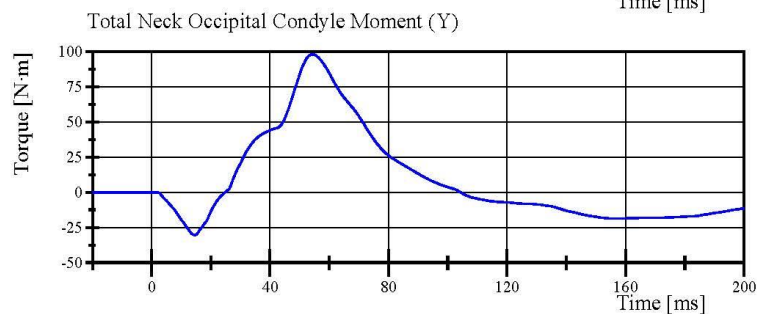
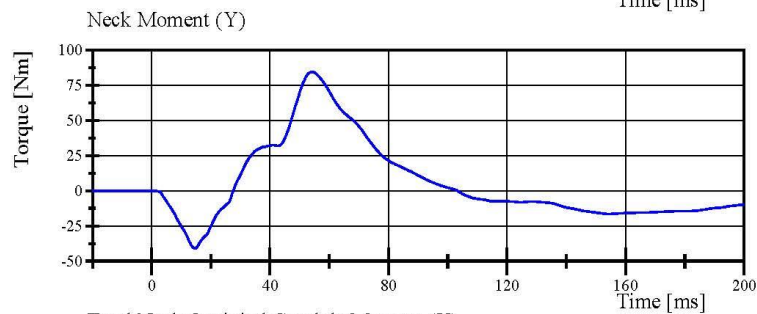
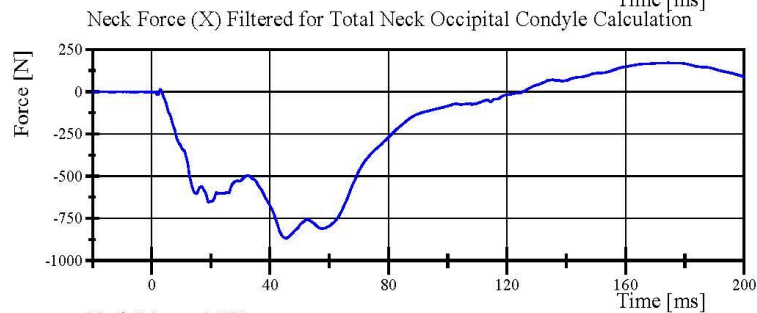
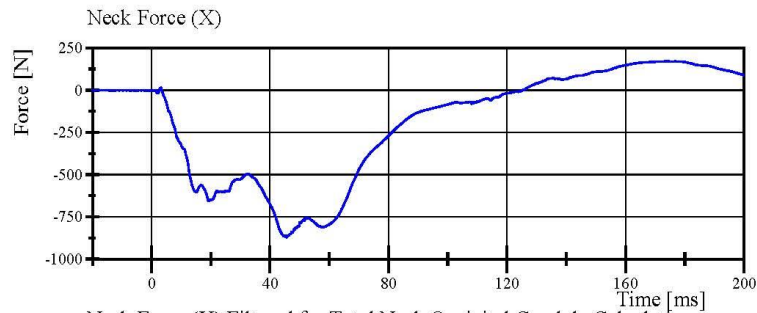


Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 49-2

Test Date: 4/16/2018



Specification Source: 78051-9904 User Manual HIII-50th FAA Male Rev B

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Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 49-3

Test Date: 4/16/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.94) - (-6.19) m/s	-5.981 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	38.6 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	20.88 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.92 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.67 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.67 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	101.3 °	Yes
Time of Peak	72 - 82 ms	76.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	157.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-52.9) - (-80) N·m	-74.66 N·m	Yes
Time of Peak	65 - 79 ms	71.7 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	147.8 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: 4728

Nodding Blocks:

Front S/N: N/A

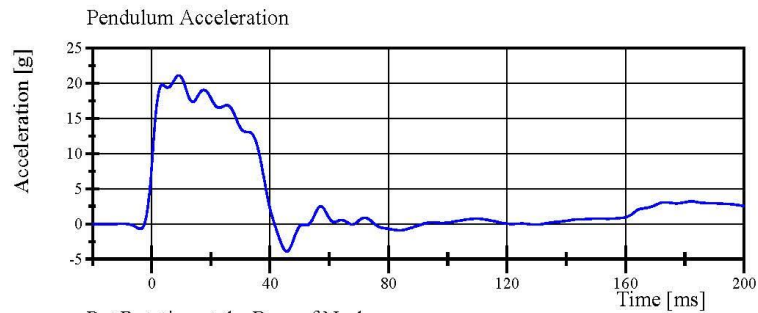
Rear S/N: N/A

Transportation Research Center Inc.

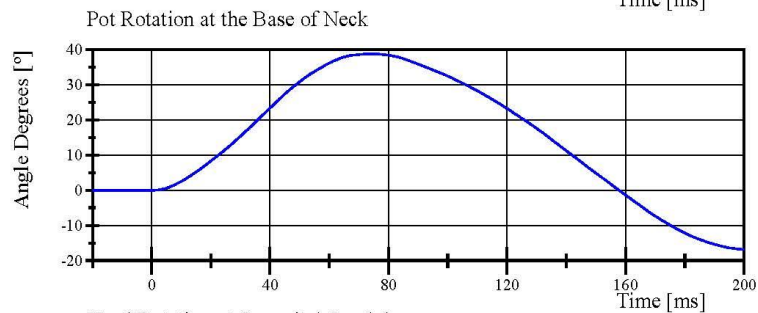
Neck Extension

HIII 50th Serial No. 037 Certification No. 49-3

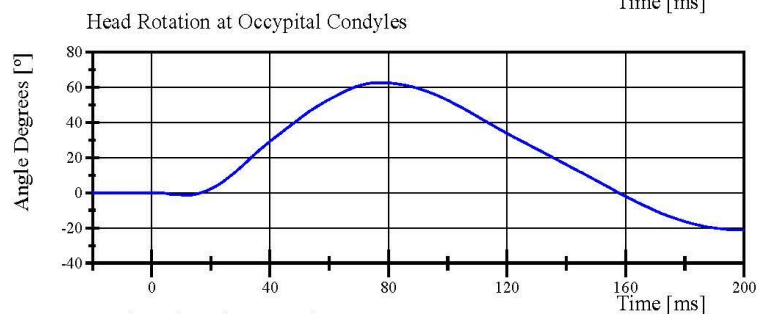
Test Date: 4/16/2018



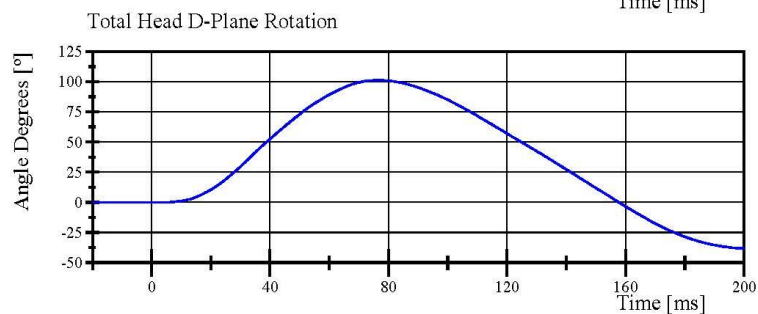
Filter Class: CFC_60
Max: 21.1 g at 9.2 ms
Min: -3.9 g at 45.7 ms



Filter Class: CFC_60
Max: 38.8 ° at 73.9 ms
Min: -16.8 ° at 200.0 ms



Filter Class: CFC_60
Max: 62.6 ° at 77.5 ms
Min: -21.2 ° at 200.0 ms



Filter Class: CFC_60
Max: 101.3 ° at 76.6 ms
Min: -38.0 ° at 200.0 ms

Specification Source: 78051-9904 User Manual HIII-50th FAA Male Rev B

04.16.2018 12:43:03 1980

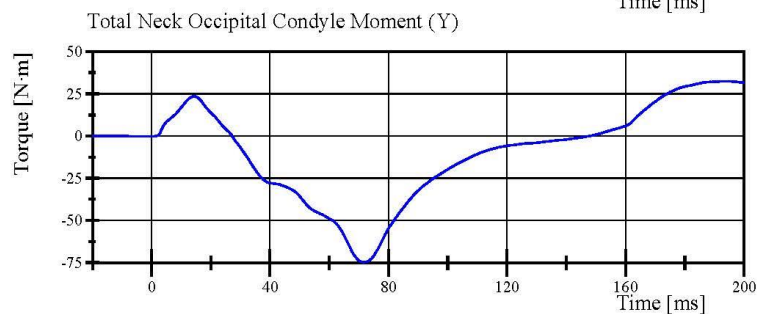
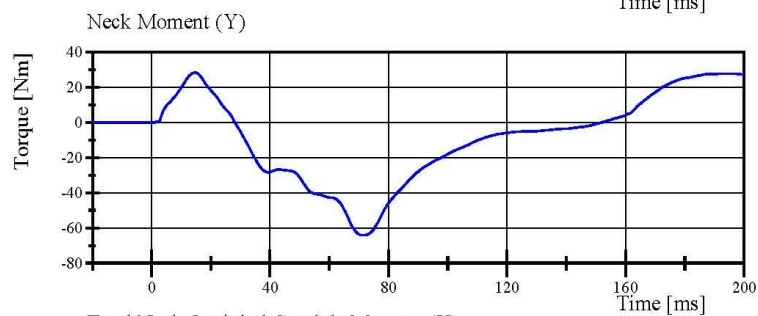
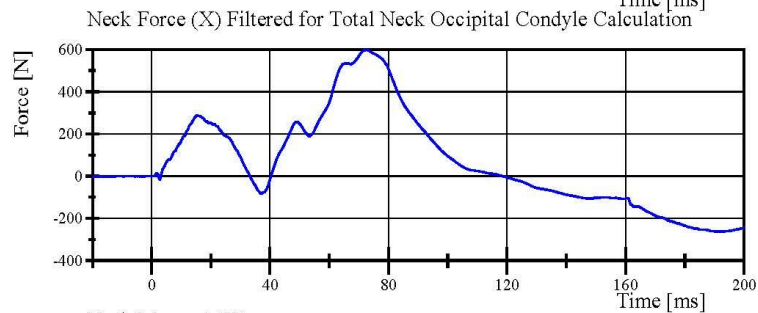
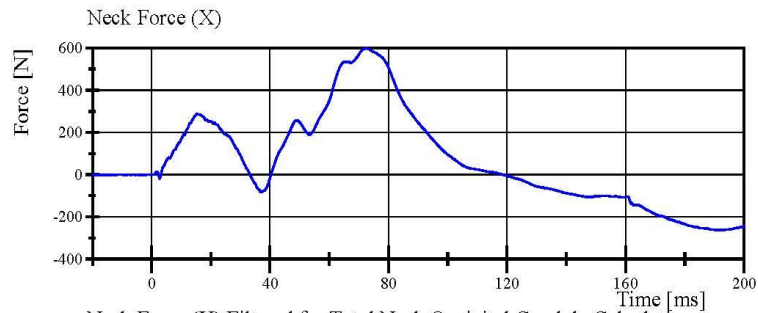


Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 49-3

Test Date: 4/16/2018



Specification Source: 78051-9904 User Manual HIII-50th FAA Male Rev B

04.16.2018 12:43:04 1980



Transportation Research Center Inc.

Front Thorax

HIH 50th Serial No. 037 Certification No. 49-1

Test Date: 4/15/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.688 m/s	Yes
Probe Force Peak	(-5,160) - (-5,894) N	-5,487.4 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-71.91 mm	Yes
Internal Hysteresis	69 - 85 %	71.8 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: 2565

Rib #1 Assembly S/N: 178051-35 HI6550

Rib #2 Assembly S/N: 36 16526

Rib #3 Assembly S/N: 37 16543

Rib #4 Assembly S/N: 38 16538

Rib #5 Assembly S/N: 39 HI6530

Rib #6 Assembly S/N: 40 16548

Rear Rib Support S/N: N/A

Bib Assembly S/N: N/A

Sternum Plate S/N: N/A

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

04.15.2018 11:54:03 377



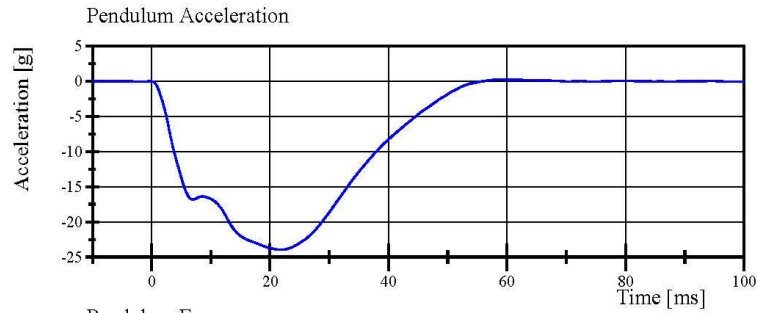
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Transportation Research Center Inc.

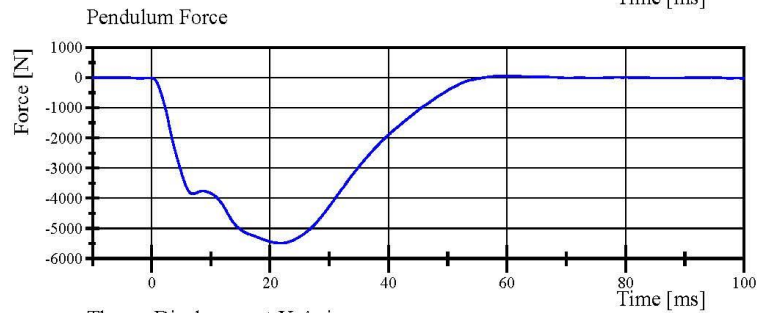
Front Thorax

HIII 50th Serial No. 037 Certification No. 49-1

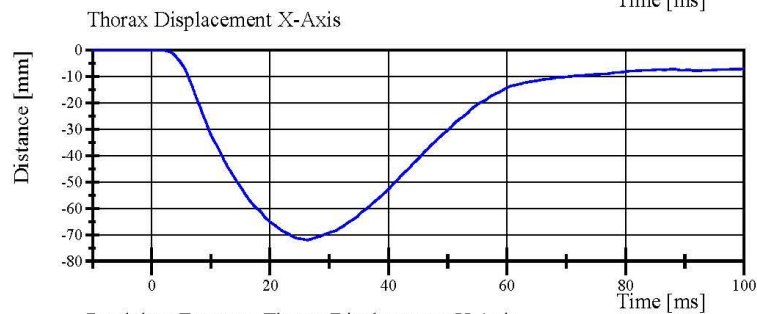
Test Date: 4/15/2018



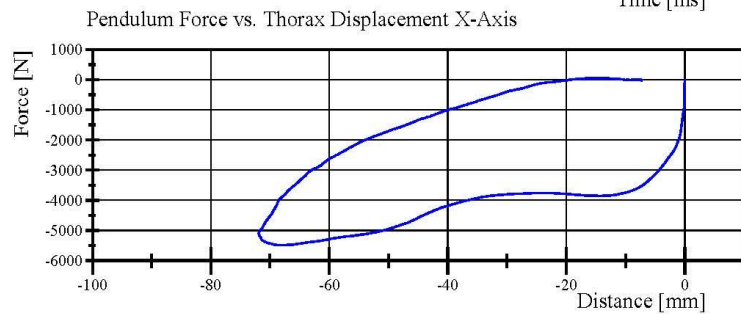
Filter Class: CFC_180
Max: 0.3 g at 58.9 ms
Min: -23.9 g at 21.8 ms



Filter Class: CFC_180
Max: 59.8 N at 58.9 ms
Min: -5,487.4 N at 21.8 ms



Filter Class: CFC_600
Max: 0.0 mm at -10.0 ms
Min: -71.9 mm at 26.3 ms



Filter Class: CFC_180
Max: 59.8 N at -15.7 mm
Min: -5,487.4 N at -68.1 mm

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

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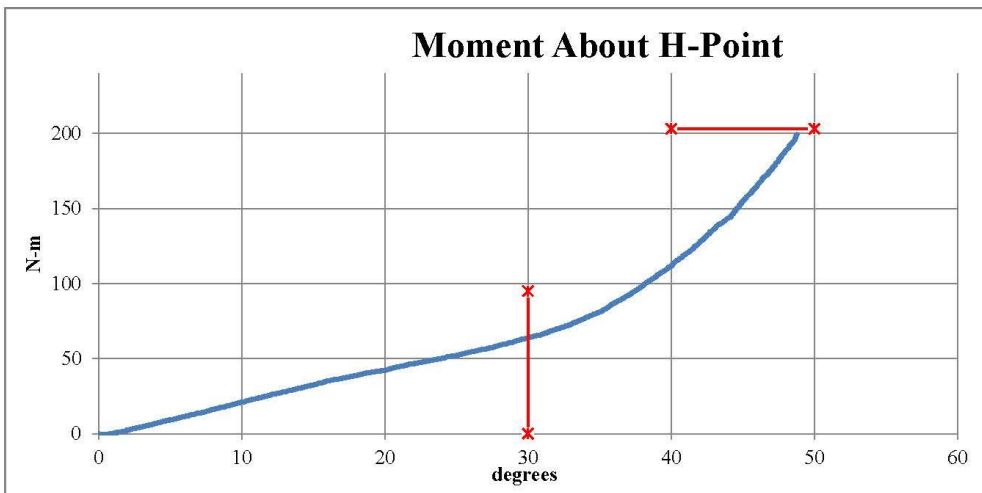
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

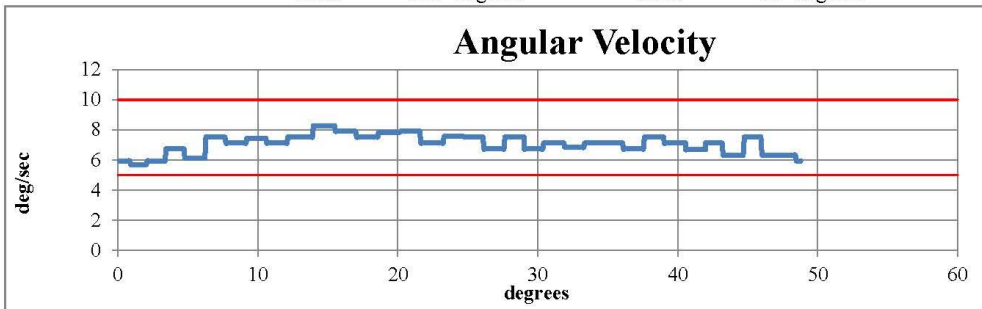


Serial Number: 037 Date: 15-Apr-2018
Side Tested: Left Hip Time: 13:33
Test Number: 1 Comments:

TEST PARAMETER	SPECIFICATION		TEST RESULTS		
Temperature	18.9	- 25.6	21.6 °C	Pass	
Humidity	10	- 70	49 %	Pass	
Moment at 30°	0	≤ 94.9	63.93 N-m	Pass	
Angle at 203 Nm	40	- 50	49.19 deg	Pass	
Average Velocity	5	- 10	7.04 deg/sec	Pass	



Max: 8.27 deg/sec Min: 5.7 deg/sec



Comments:
Pelvis Skin S/N: N/A
Lumbar Spine S/N: 0551
Lumbar Cable S/N: N/A

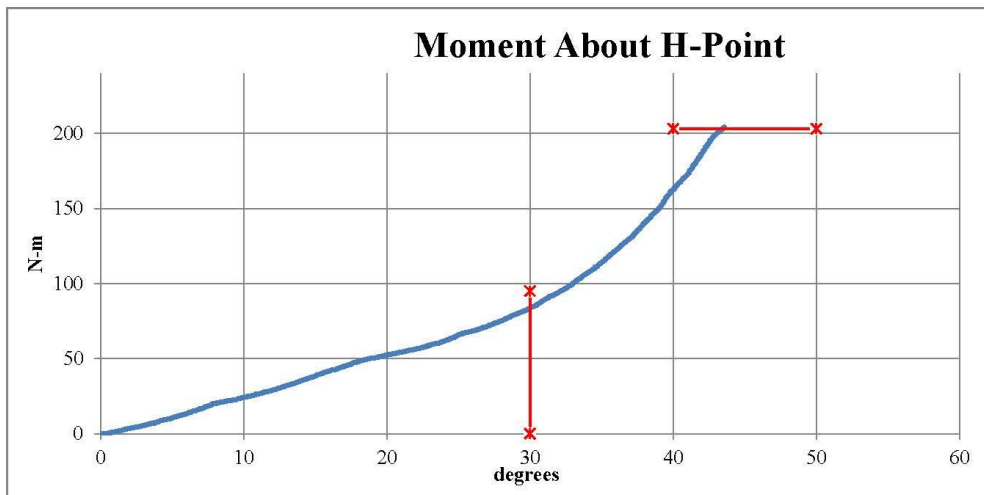
Transportation Research Center Inc.

Hybrid III 50th Male Hip Range of Motion

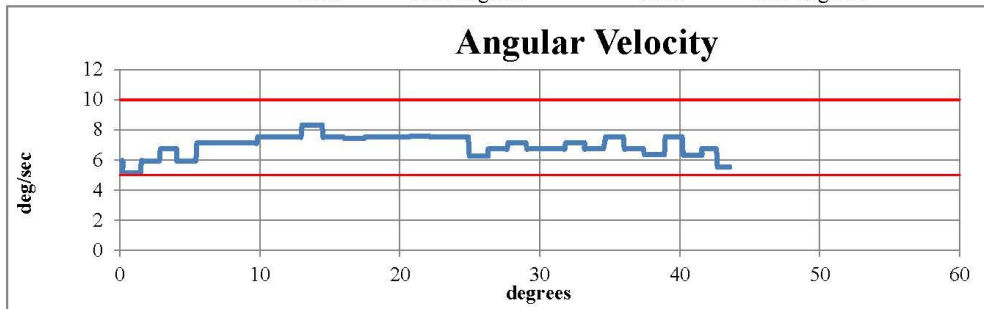


Serial Number: 037 Date: 15-Apr-2018
Side Tested: Right Hip Time: 14:34
Test Number: 1 Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	20.8 °C Pass
Humidity	10 - 70	49 % Pass
Moment at 30°	0 ≤ 94.9	83.76 N-m Pass
Angle at 203 Nm	40 - 50	43.57 deg Pass
Average Velocity	5 - 10	6.96 deg/sec Pass



Max: 8.31 deg/sec Min: 5.14 deg/sec



Comments:
Pelvis Skin S/N: N/A
Lumbar Spine S/N: 0551
Lumbar Cable S/N: N/A

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 49-1
Test Date: 4/15/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.082 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,464.18 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 2672

Knee Insert S/N: N/A

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

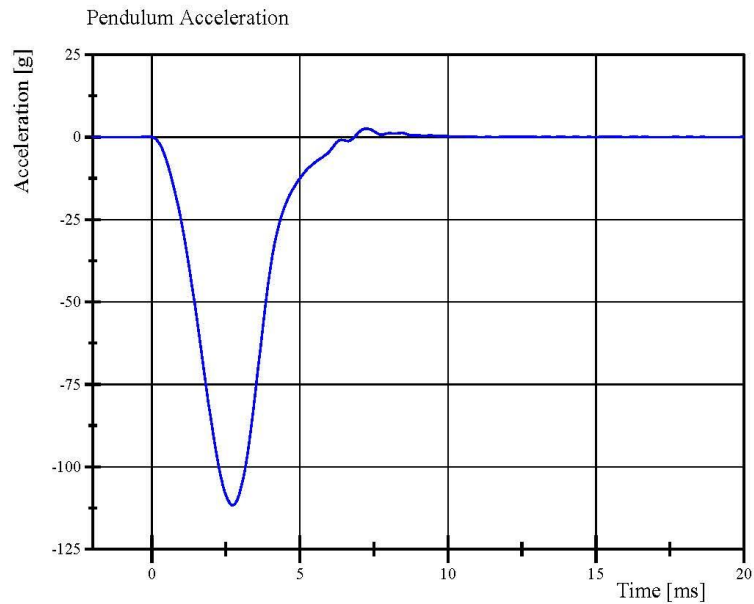
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04.15.2018 13:48:35 1717

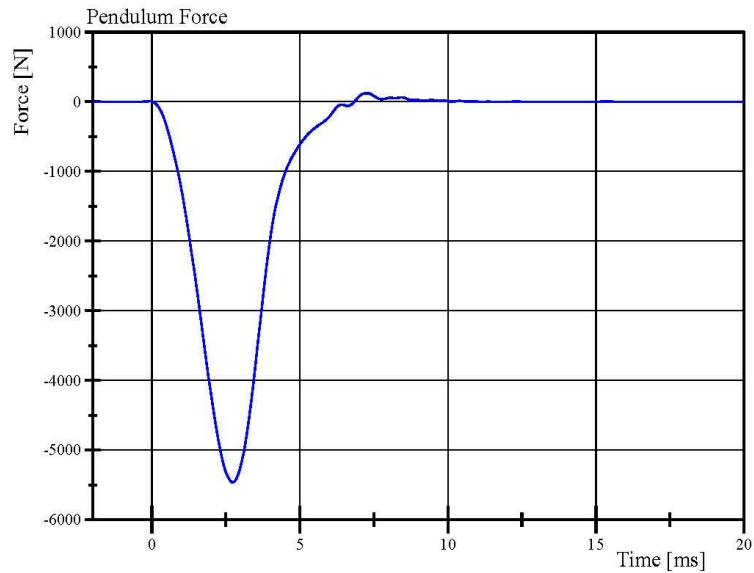


Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 49-1
Test Date: 4/15/2018



Filter Class: CFC_600
Max: 2.6 g at 7.3 ms
Min: -111.7 g at 2.7 ms



Filter Class: CFC_600
Max: 125.1 N at 7.3 ms
Min: -5,464.2 N at 2.7 ms

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

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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 49-1
Test Date: 4/15/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.085 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,379.64 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 3131

Knee Insert S/N: N/A

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

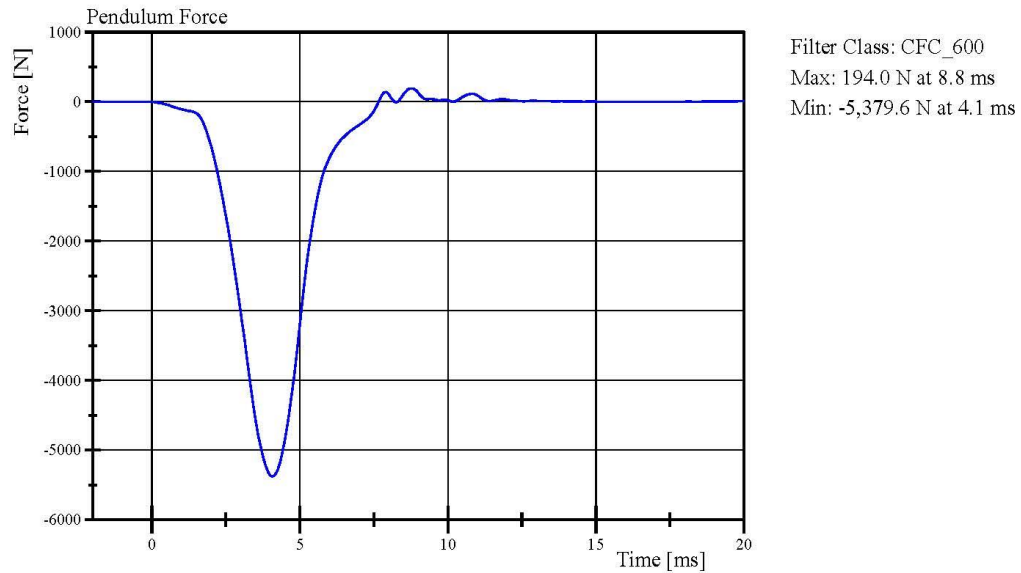
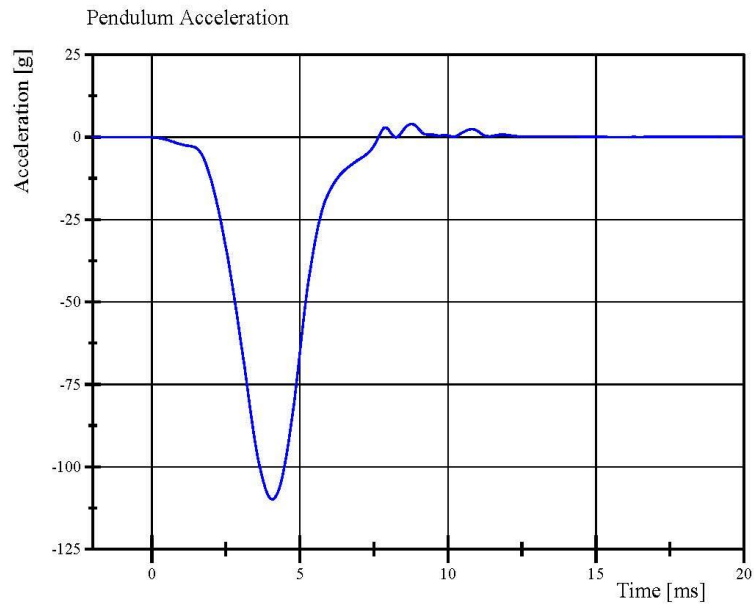
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04.15.2018 13:53:00 1697



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 037 Certification No. 49-1
Test Date: 4/15/2018



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

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Pre-Test Calibration Sheets

Front Passenger S/N 070

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 070 Calibration No. 34

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	779	Yes
B	Shoulder Pivot Height	431.8 - 457.2	444	Yes
C	Hip Pivot Height	81.3 - 86.3	82	Yes
D	Hip Pivot from Backline	144.8 - 149.8	145	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	81	Yes
F	Thigh Clearance	119.4 - 134.6	128	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	249	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	281	Yes
J	Elbow Rest Height	182.8 - 203.2	184	Yes
K	Buttock Knee Length	520.7 - 546.1	537	Yes
L	Popliteal Height	355.6 - 376.0	364	Yes
M	Knee Pivot Height	393.7 - 419.1	403	Yes
N	Buttock Popliteal Length	414.0 - 439.4	430	Yes
O	Chest Depth without Jacket	175.3 - 190.5	181	Yes
P	Foot Length	218.5 - 233.7	225	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	473	Yes
S	Head Breadth	137.1 - 147.3	138	Yes
T	Head Depth	177.8 - 188.0	180	Yes
U	Hip Breadth	299.7 - 314.9	306	Yes
V	Shoulder Breadth	350.5 - 365.7	360	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	538	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	871	Yes
Z	Waist Circumference	759.5 - 789.9	777	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	355	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	163	Yes



Revised 8/10/2012

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 070 Certification No. 34-1

Test Date: 4/5/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	278.0 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	5.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: 06211

Skull S/N: 88105/101C 05 010218

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

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04.05.2018 06:51:16 580

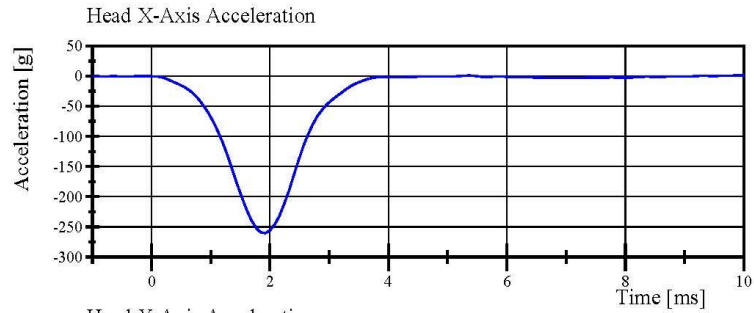


Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 070 Certification No. 34-1

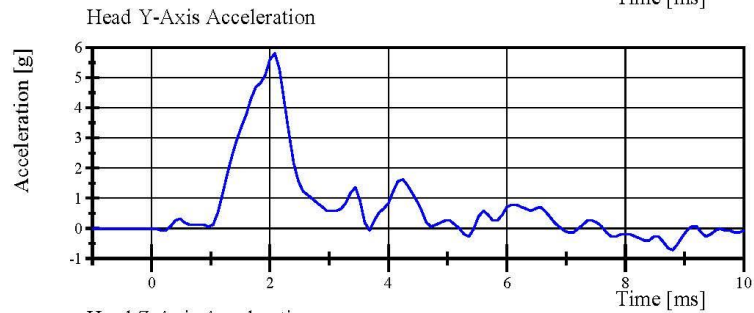
Test Date: 4/5/2018



Filter Class: CFC_1000

Max: 1.4 g at 10.0 ms

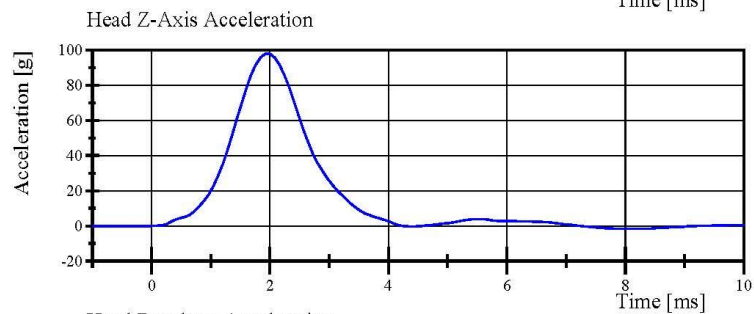
Min: -260.2 g at 1.9 ms



Filter Class: CFC_1000

Max: 5.8 g at 2.1 ms

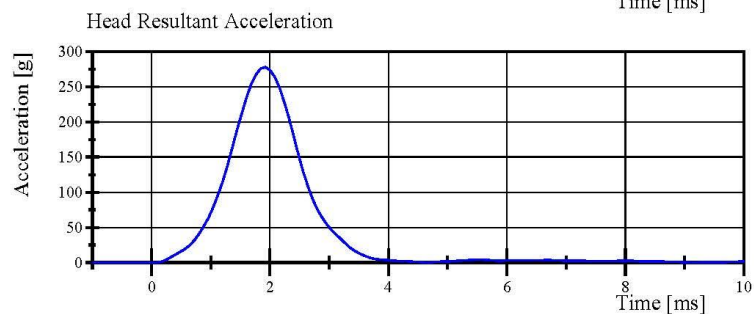
Min: -0.7 g at 8.8 ms



Filter Class: CFC_1000

Max: 97.9 g at 1.9 ms

Min: -1.6 g at 8.2 ms



Filter Class: CFC_1000

Max: 278.0 g at 1.9 ms

Min: 0.0 g at -0.6 ms

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

04.05.2018 06:51:50 580



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Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 34-3

Test Date: 4/6/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.035 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.30 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.47 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.27 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-89.6 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	80.0 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	89.9 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: DJ2788

Neck Cable S/N: N/A

Nodding Blocks:

Front S/N: 85-DI7305

Rear S/N: 85-DI7105

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

04.06.2018 15:45:03 1821



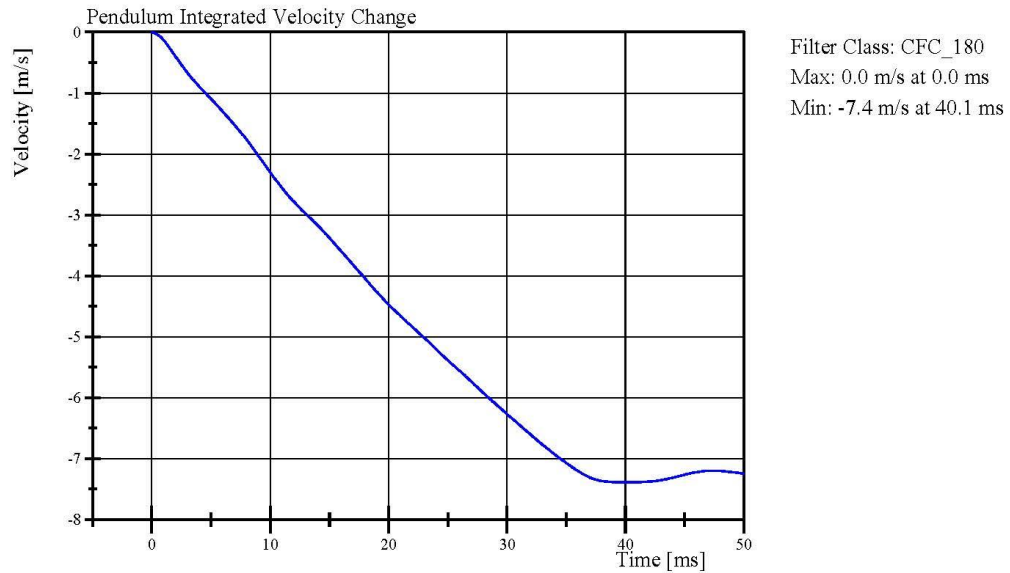
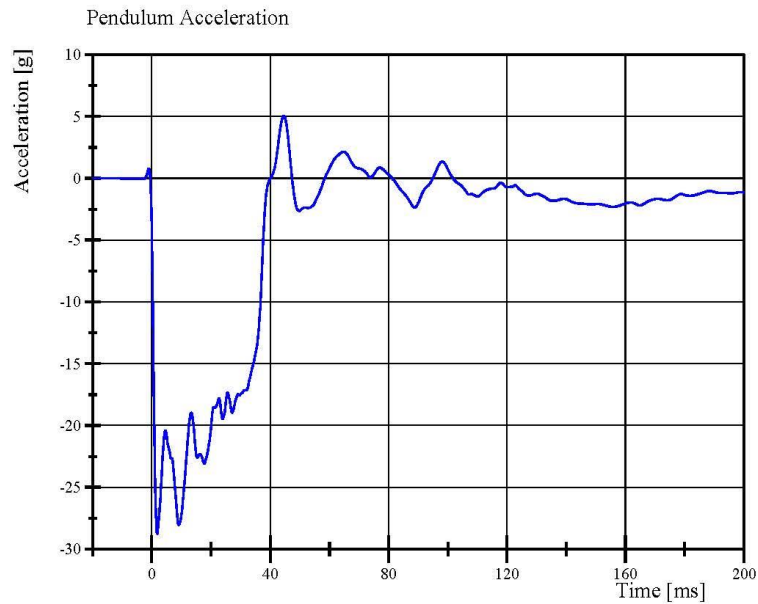
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Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 34-3

Test Date: 4/6/2018



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

04.06.2018 15:45:58 1821



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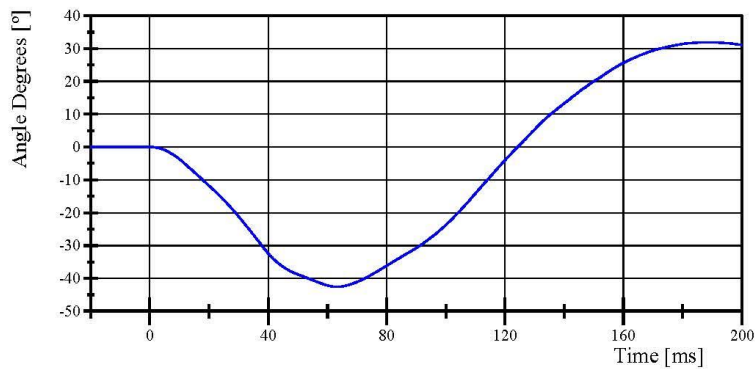
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 34-3

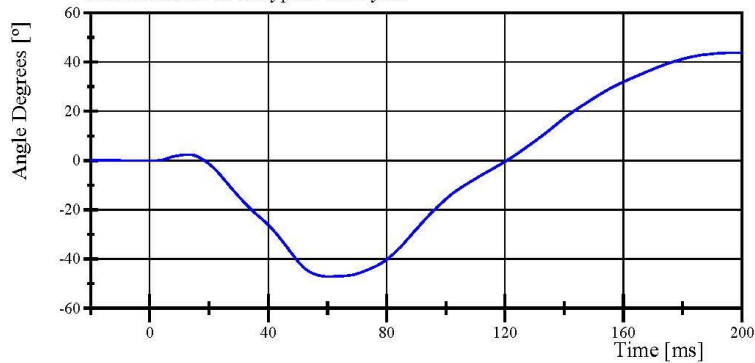
Test Date: 4/6/2018

Pot Rotation at the Base of Neck



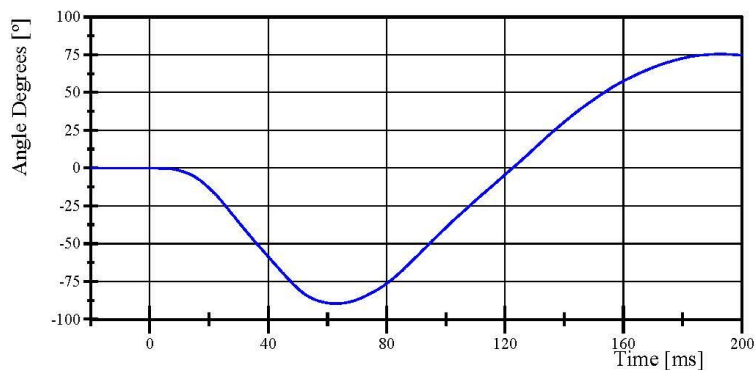
Filter Class: CFC_60
Max: 31.9 ° at 188.5 ms
Min: -42.6 ° at 63.3 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 43.6 ° at 196.5 ms
Min: -47.1 ° at 60.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 75.3 ° at 192.8 ms
Min: -89.6 ° at 62.7 ms

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

04.06.2018 15:45:59 1821

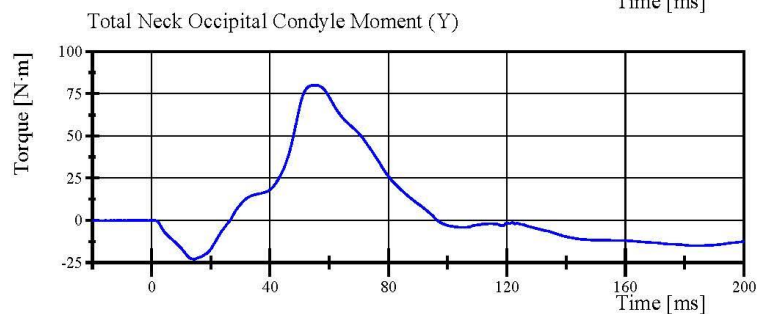
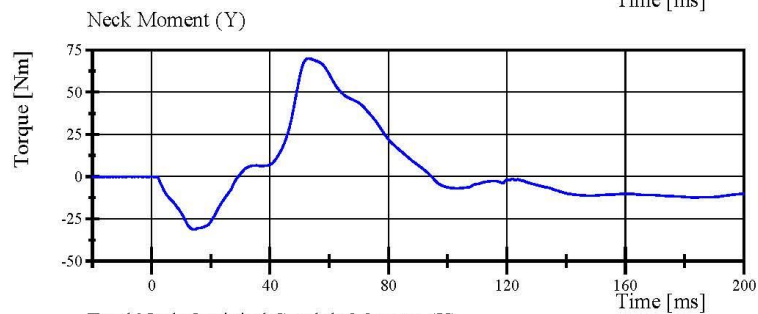
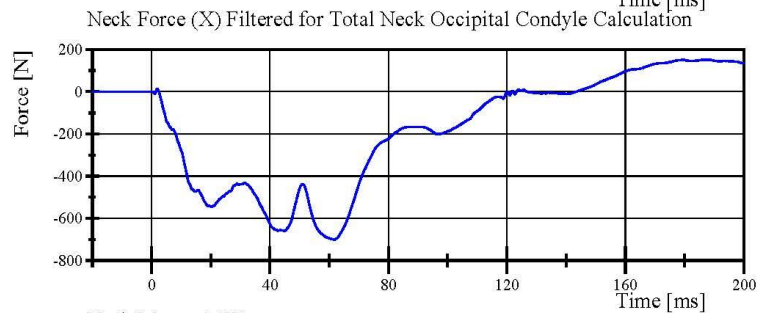
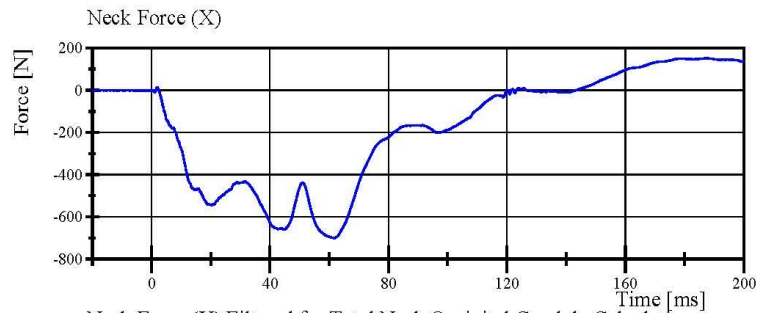


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 34-3

Test Date: 4/6/2018



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

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Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 34-2

Test Date: 4/7/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.098 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.87 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.62 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.16 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	108.8 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-55.5 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	104.2 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: DJ2788

Neck Cable S/N: N/A

Nodding Blocks:

Front S/N: 85-DI7305

Rear S/N: 85-DI7105

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

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04.07.2018 07:46:20 1961

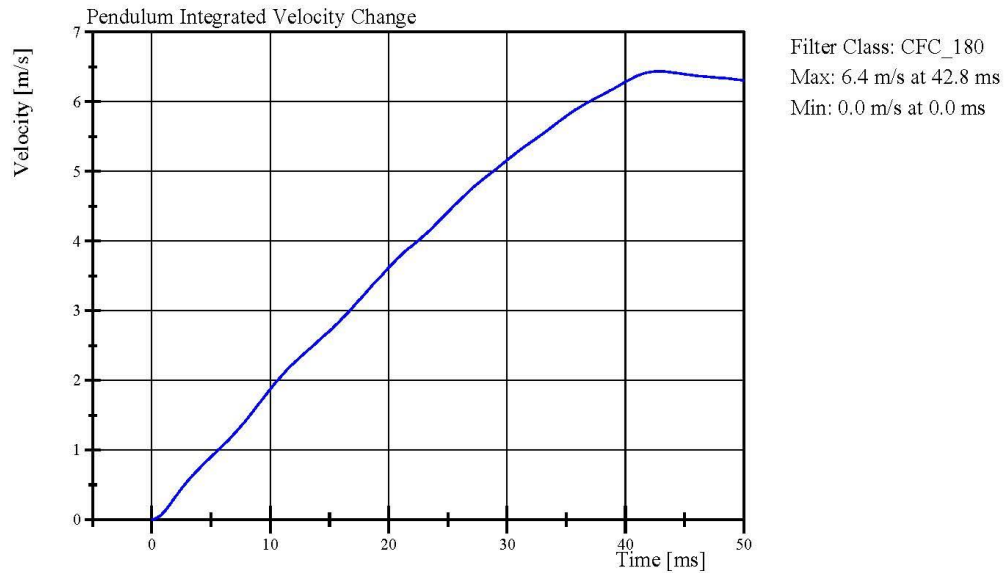
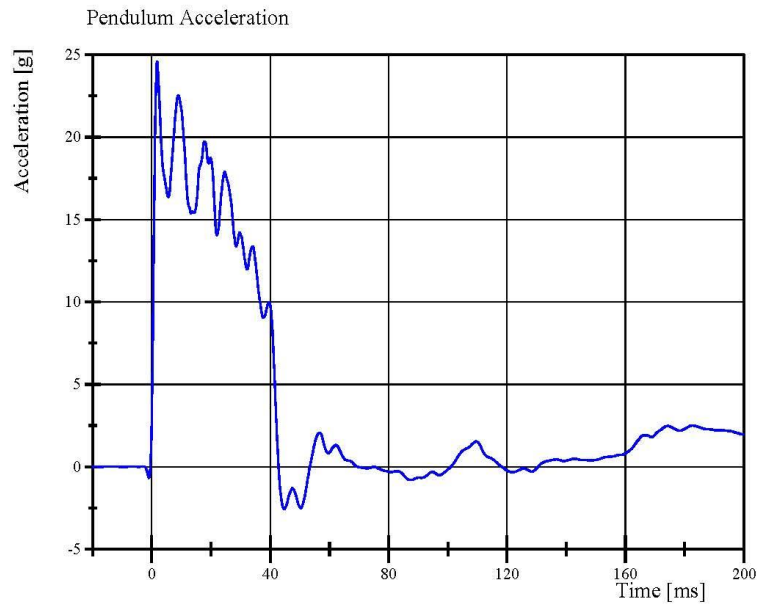


Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 34-2

Test Date: 4/7/2018



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

04.07.2018 07:49:30 1961



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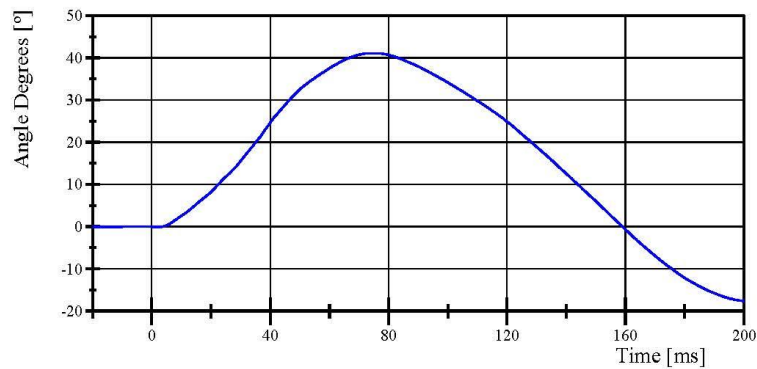
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 34-2

Test Date: 4/7/2018

Pot Rotation at the Base of Neck

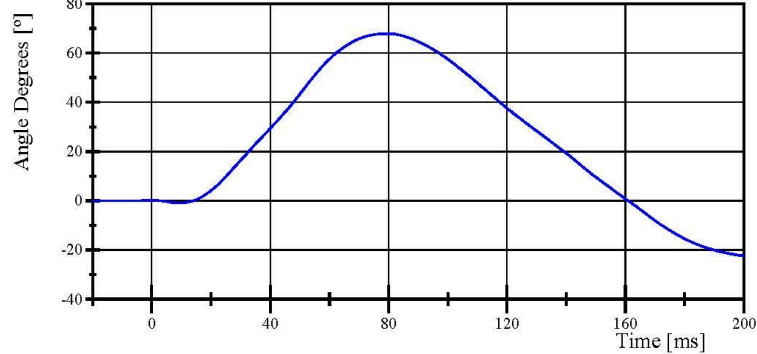


Filter Class: CFC_60

Max: 41.1 ° at 74.9 ms

Min: -17.6 ° at 200.0 ms

Head Rotation at Occypital Condyles

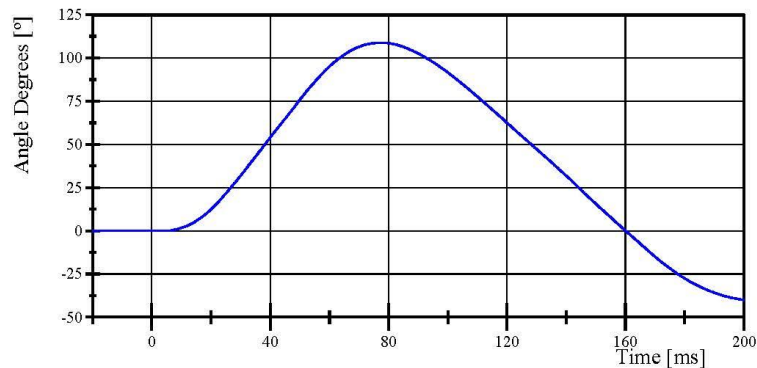


Filter Class: CFC_60

Max: 67.9 ° at 79.7 ms

Min: -22.3 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 108.8 ° at 77.5 ms

Min: -40.0 ° at 200.0 ms

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

04.07.2018 07:49:30 1961

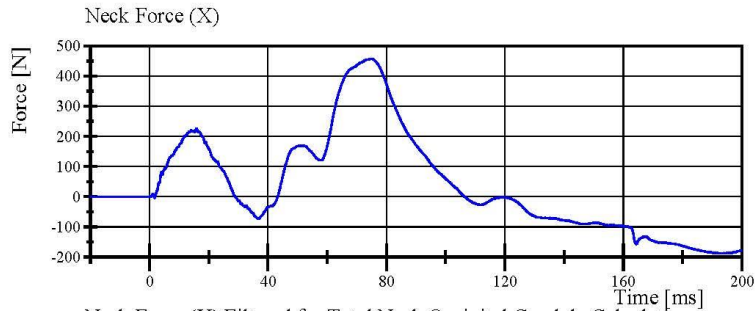


Transportation Research Center Inc.

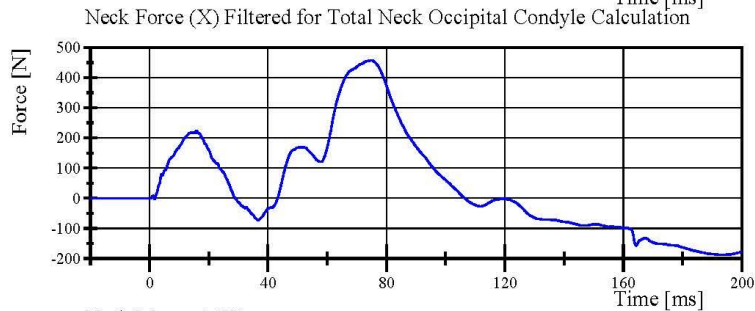
Neck Extension

HIII 5th Serial No. 070 Certification No. 34-2

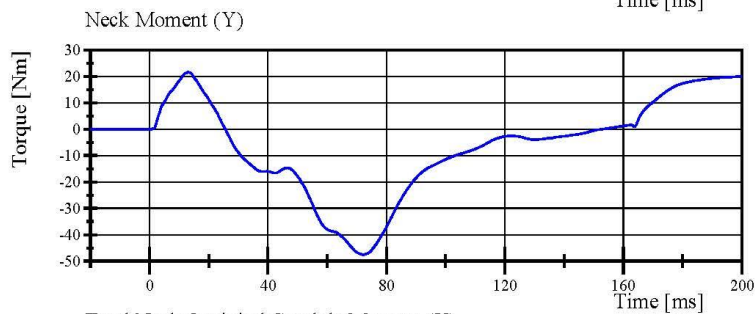
Test Date: 4/7/2018



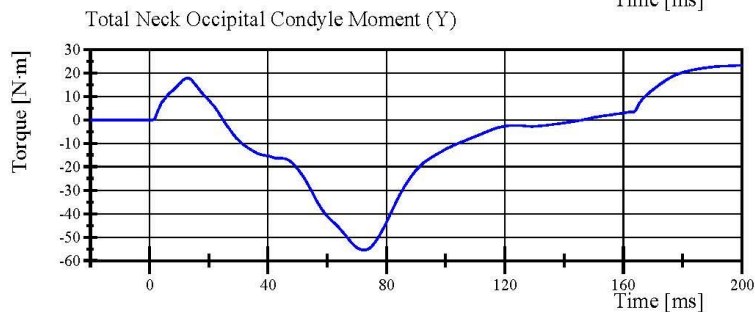
Filter Class: CFC_1000
Max: 457.6 N at 75.1 ms
Min: -188.3 N at 193.7 ms



Filter Class: CFC_600
Max: 457.4 N at 75.1 ms
Min: -188.0 N at 193.6 ms



Filter Class: CFC_600
Max: 21.6 Nm at 13.1 ms
Min: -47.5 Nm at 72.2 ms



Filter Class: Without_(Consta
Max: 23.2 N·m at 199.1 ms
Min: -55.5 N·m at 72.4 ms

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

04.07.2018 07:49:31 1961



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Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 070 Certification No. 34-1

Test Date: 4/6/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.706 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-3,991.7 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-3,991.9 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-52.4 mm	Yes
Internal Hysteresis	69 - 85 %	72.0 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: N/A

Rib #1 S/N: N/A

Rib #2 S/N: N/A

Rib #3 S/N: N/A

Rib #4 S/N: N/A

Rib #5 S/N: N/A

Rib #6 S/N: N/A

Rib Stiffeners S/N: N/A

Bib S/N: N/A

Sternum Plate S/N: N/A

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

04.06.2018 06:52:39 365



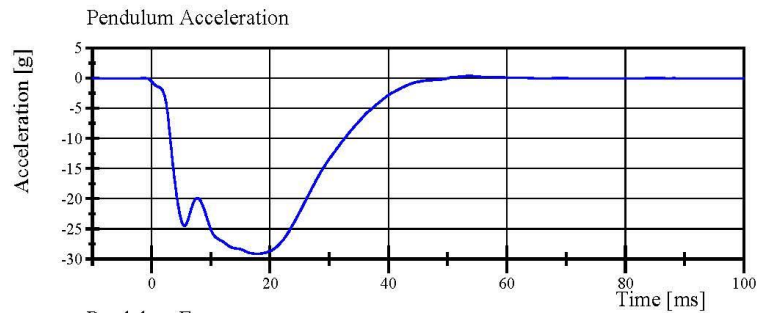
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Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 070 Certification No. 34-1

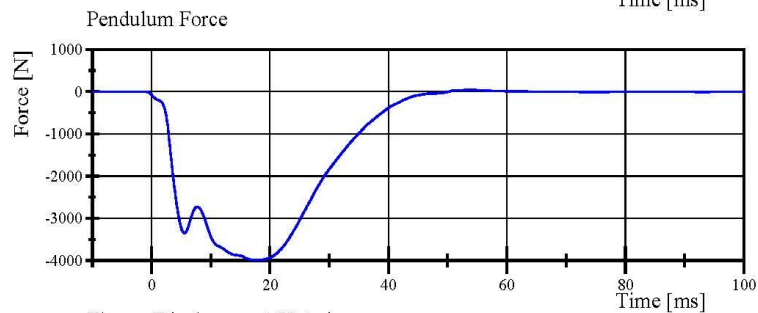
Test Date: 4/6/2018



Filter Class: CFC_180

Max: 0.4 g at 53.6 ms

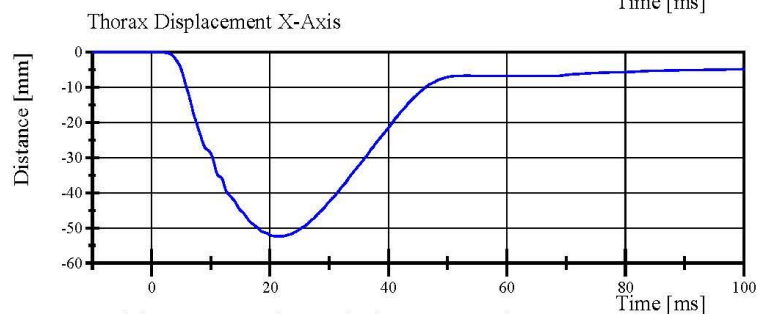
Min: -29.1 g at 17.9 ms



Filter Class: CFC_180

Max: 49.8 N at 53.6 ms

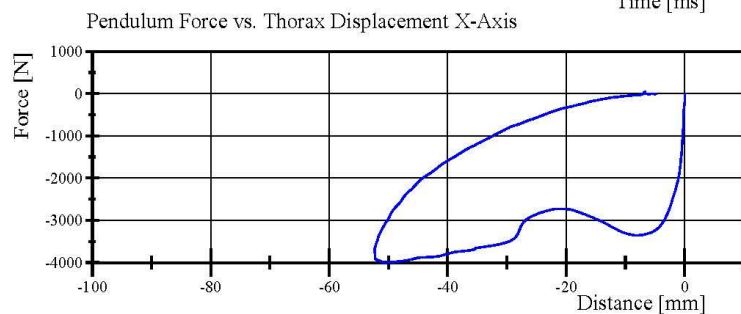
Min: -3,991.9 N at 17.9 ms



Filter Class: CFC_600

Max: 0.0 mm at -7.1 ms

Min: -52.4 mm at 22.0 ms



Filter Class: CFC_180

Max: 49.8 N at -6.7 mm

Min: -3,991.9 N at -49.9 mm

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

04.06.2018 06:53:44 365



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Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 34-1
Test Date: 4/4/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.075 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,712.3 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 05856

Knee Insert S/N: N/A

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

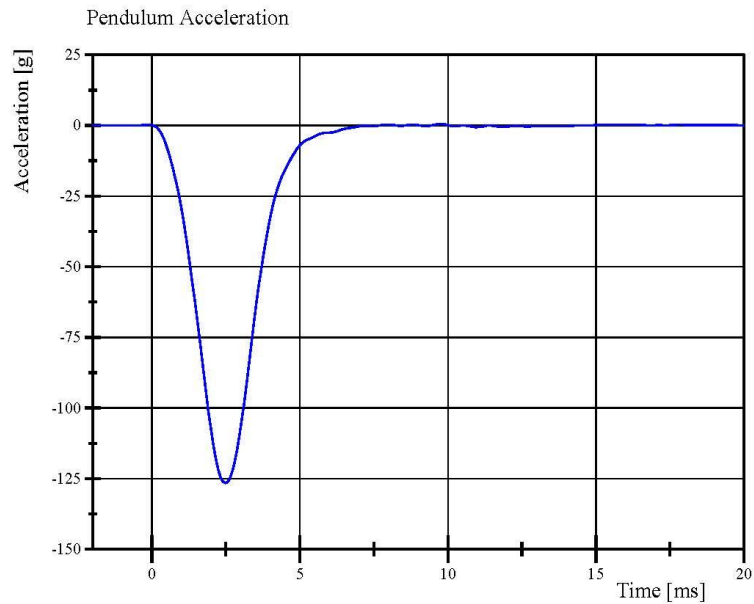
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04.04.2018 11:51:16 1746

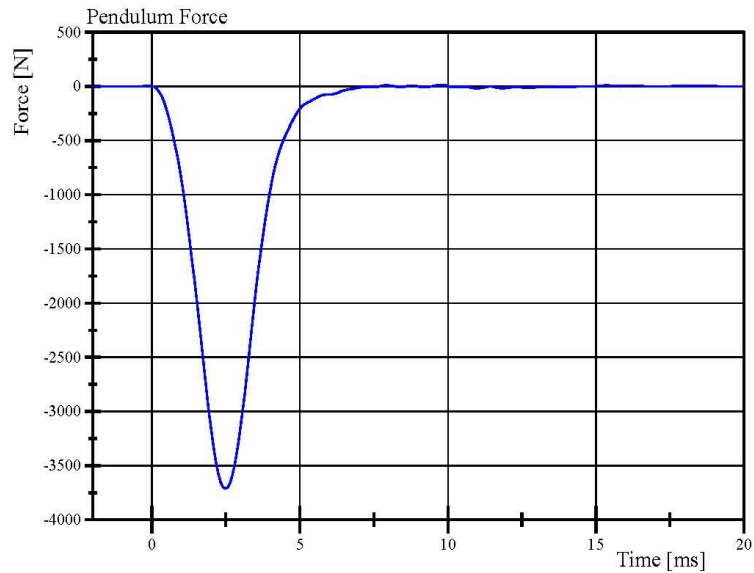


Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 34-1
Test Date: 4/4/2018



Filter Class: CFC_600
Max: 0.5 g at 9.8 ms
Min: -126.6 g at 2.5 ms



Filter Class: CFC_600
Max: 14.5 N at 9.8 ms
Min: -3,712.3 N at 2.5 ms

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

04.04.2018 11:52:52 1746



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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 34-1
Test Date: 4/4/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.100 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,756.7 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 05269

Knee Insert S/N: N/A

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

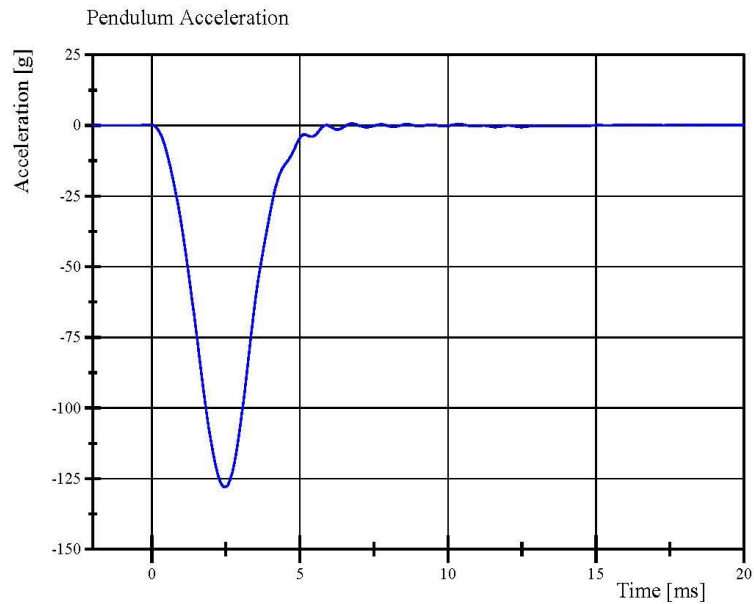
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04.04.2018 11:56:48 1728

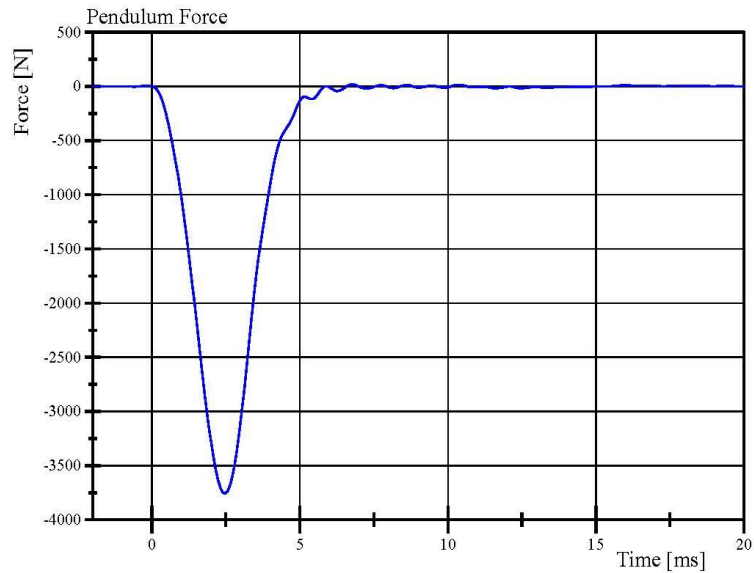


Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 34-1
Test Date: 4/4/2018



Filter Class: CFC_600
Max: 0.6 g at 6.7 ms
Min: -128.1 g at 2.5 ms



Filter Class: CFC_600
Max: 17.2 N at 6.7 ms
Min: -3,756.7 N at 2.5 ms

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

04.04.2018 11:58:58 1728



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Transportation Research Center Inc.

Hybrid III Small Female Torso Flexion

NHTSA

Serial Number: 070

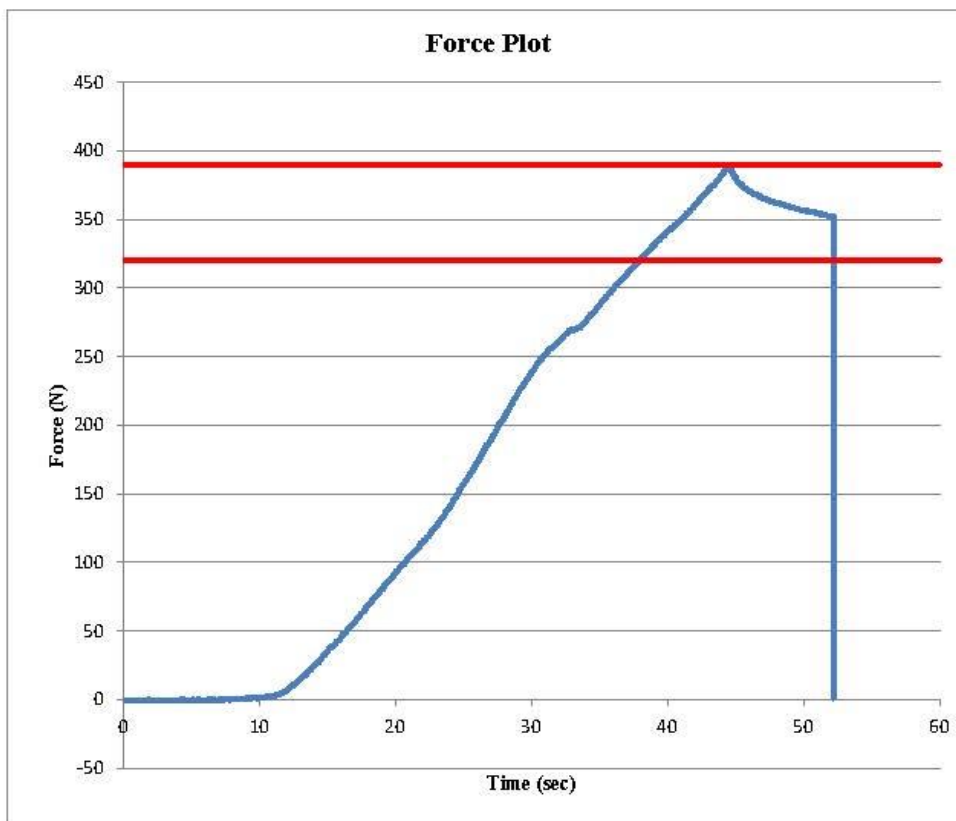
Date: 4/5/2018

Test Number: 1

Time: 13:08



TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.4 °C Pass
Humidity	10 - 70	35 % Pass
Average Angular Velocity	0.5 - 1.5	0.92 deg/sec Pass
Initial Angle	0 - 20	15.59 deg Pass
Peak Force at 45.21°	320 - 390	388.11 N Pass
Final Angle	-8 - 8	4.29 deg Pass



Comments:
 Jacket S/N: N/A
 Abdomen S/N: 0506531
 Pelvis Skin S/N: N/A

Post-Test Calibration Sheets

Front Passenger S/N 070

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 070 Calibration No. 35

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	779	Yes
B	Shoulder Pivot Height	431.8 - 457.2	444	Yes
C	Hip Pivot Height	81.3 - 86.3	82	Yes
D	Hip Pivot from Backline	144.8 - 149.8	145	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	81	Yes
F	Thigh Clearance	119.4 - 134.6	128	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	249	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	281	Yes
J	Elbow Rest Height	182.8 - 203.2	184	Yes
K	Buttock Knee Length	520.7 - 546.1	537	Yes
L	Popliteal Height	355.6 - 376.0	364	Yes
M	Knee Pivot Height	393.7 - 419.1	403	Yes
N	Buttock Popliteal Length	414.0 - 439.4	430	Yes
O	Chest Depth without Jacket	175.3 - 190.5	181	Yes
P	Foot Length	218.5 - 233.7	225	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	473	Yes
S	Head Breadth	137.1 - 147.3	138	Yes
T	Head Depth	177.8 - 188.0	180	Yes
U	Hip Breadth	299.7 - 314.9	306	Yes
V	Shoulder Breadth	350.5 - 365.7	360	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	538	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	871	Yes
Z	Waist Circumference	759.5 - 789.9	777	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	355	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	163	Yes

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 070 Certification No. 35-2

Test Date: 4/14/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	265.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	6.3 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Condition: Used

Comments:

Head Skin S/N: 06211

Skull S/N: 88105/101C 05 010218

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

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04.14.2018 08:15:22 578

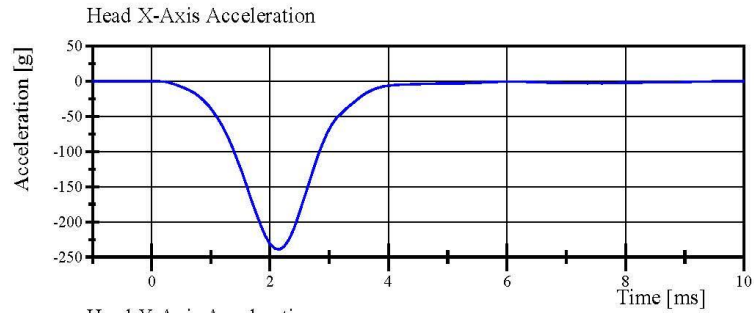


Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 070 Certification No. 35-2

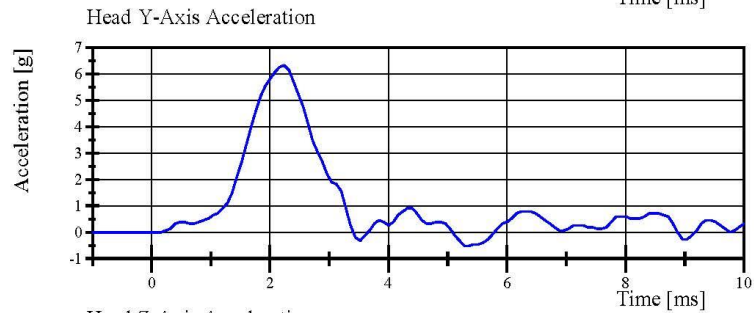
Test Date: 4/14/2018



Filter Class: CFC_1000

Max: 0.3 g at 9.8 ms

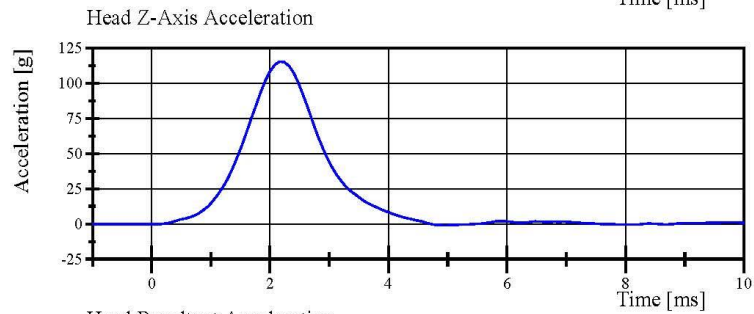
Min: -239.2 g at 2.2 ms



Filter Class: CFC_1000

Max: 6.3 g at 2.2 ms

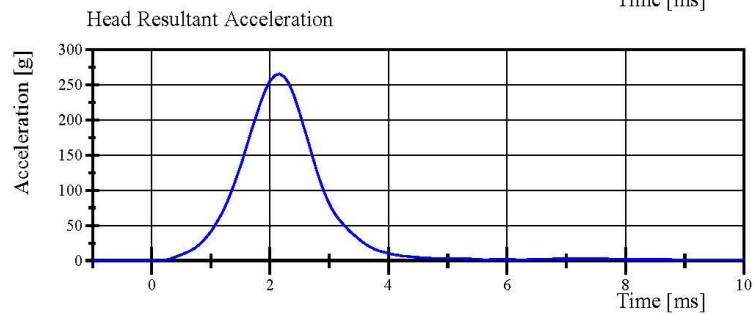
Min: -0.5 g at 5.3 ms



Filter Class: CFC_1000

Max: 115.4 g at 2.2 ms

Min: -0.8 g at 5.0 ms



Filter Class: CFC_1000

Max: 265.7 g at 2.2 ms

Min: 0.0 g at -0.9 ms

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

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Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 35-1

Test Date: 4/14/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.039 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.49 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.70 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.51 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-83.8 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	78.1 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	86.4 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: DJ2788

Neck Cable S/N: N/A

Nodding Blocks:

Front S/N: 85-DI7305

Rear S/N: 85-DI7105

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

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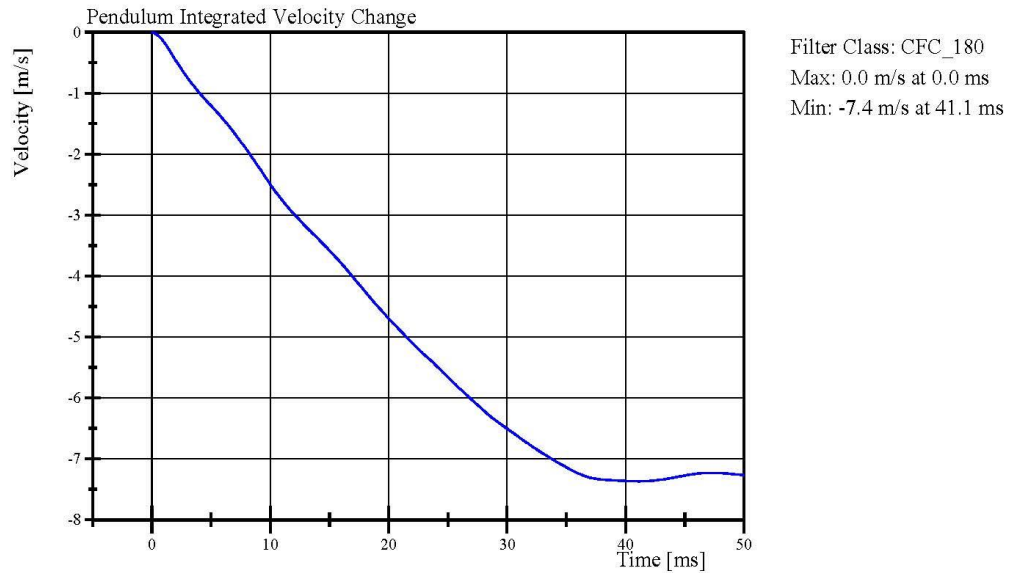
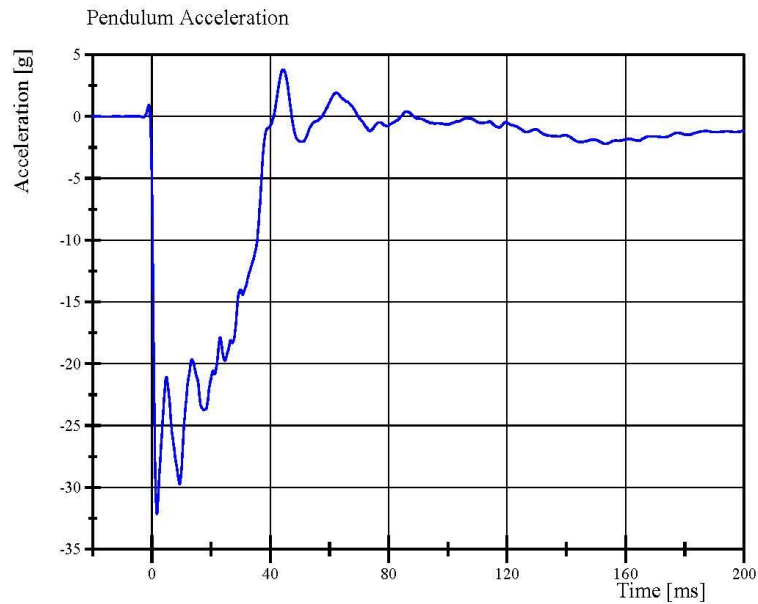
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Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 35-1

Test Date: 4/14/2018



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

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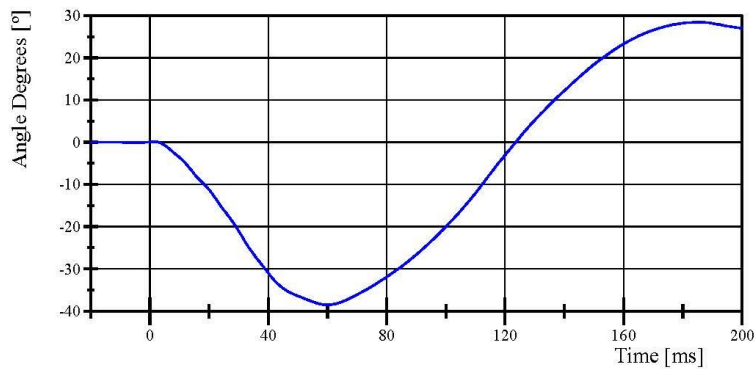
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 35-1

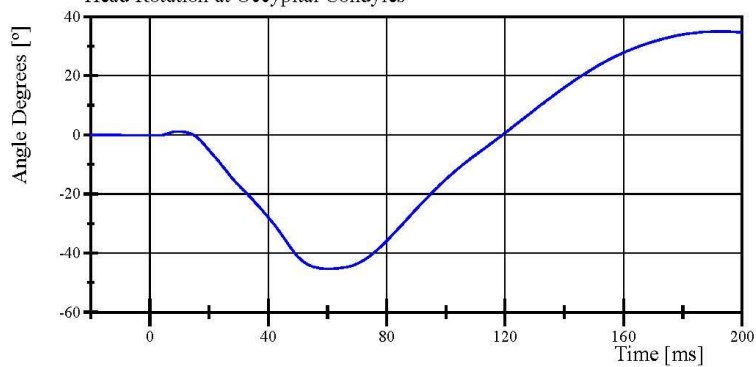
Test Date: 4/14/2018

Pot Rotation at the Base of Neck



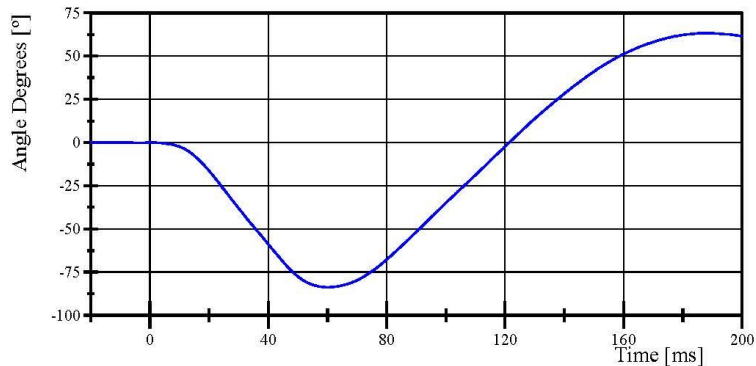
Filter Class: CFC_60
Max: 28.5 ° at 185.5 ms
Min: -38.5 ° at 60.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 35.1 ° at 193.3 ms
Min: -45.3 ° at 60.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 63.3 ° at 187.7 ms
Min: -83.8 ° at 60.1 ms

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

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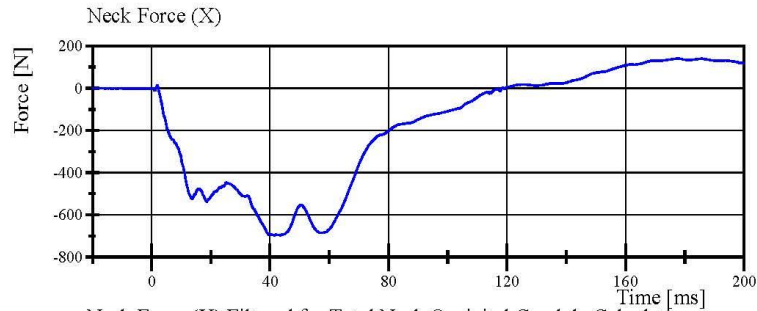


Transportation Research Center Inc.

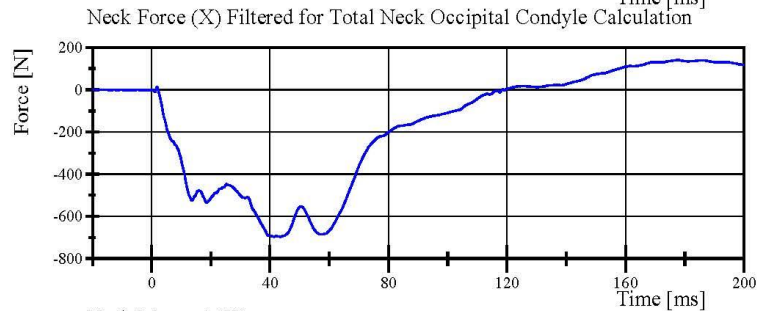
Neck Flexion

HIII 5th Serial No. 070 Certification No. 35-1

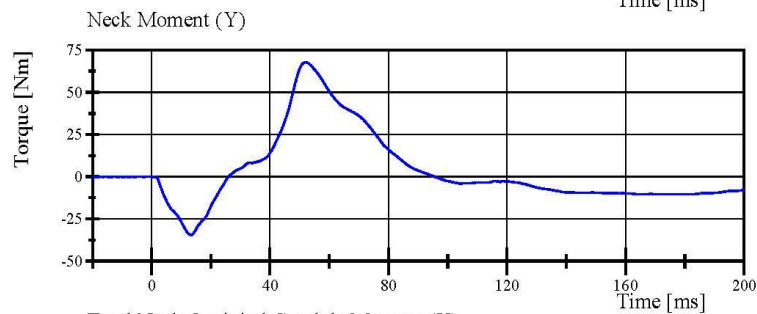
Test Date: 4/14/2018



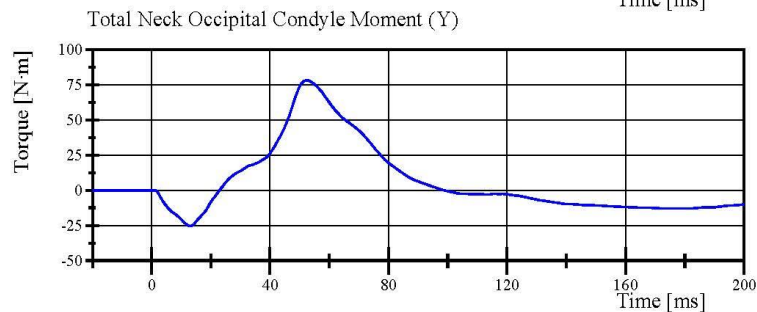
Filter Class: CFC_1000
Max: 140.7 N at 177.5 ms
Min: -696.9 N at 43.5 ms



Filter Class: CFC_600
Max: 140.5 N at 177.5 ms
Min: -696.2 N at 43.5 ms



Filter Class: CFC_600
Max: 67.8 Nm at 52.0 ms
Min: -34.4 Nm at 13.4 ms



Filter Class: Without_(Consta
Max: 78.1 N·m at 52.3 ms
Min: -25.2 N·m at 13.1 ms

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

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Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 35-1

Test Date: 4/14/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.105 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.82 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.57 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.16 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	111.1 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-57.8 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	105.4 ms	Yes

Test meets specifications.

Condition: Used

Comments:

Neck S/N: DJ2788

Neck Cable S/N: N/A

Nodding Blocks:

Front S/N: 85-DI7305

Rear S/N: 85-DI7105

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

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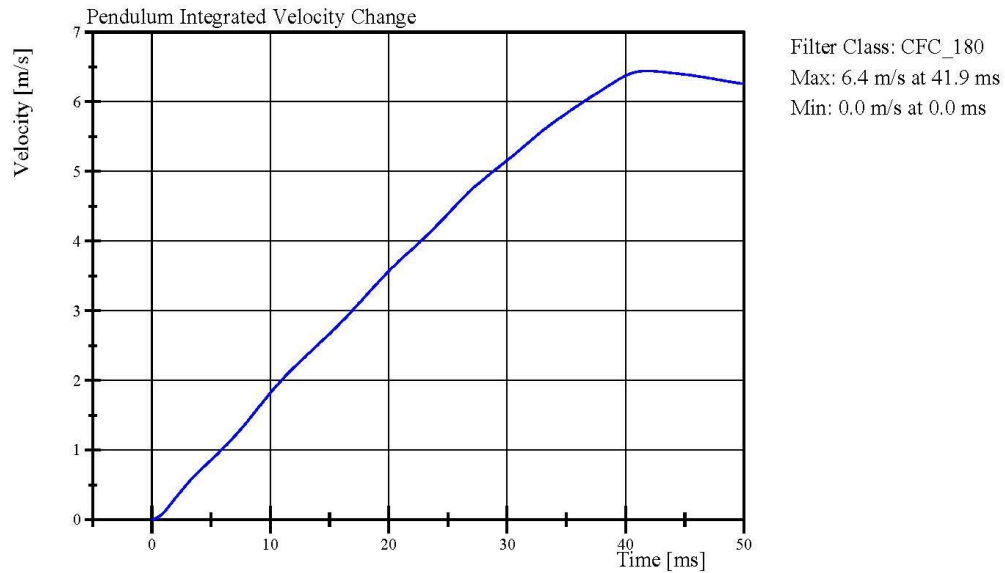
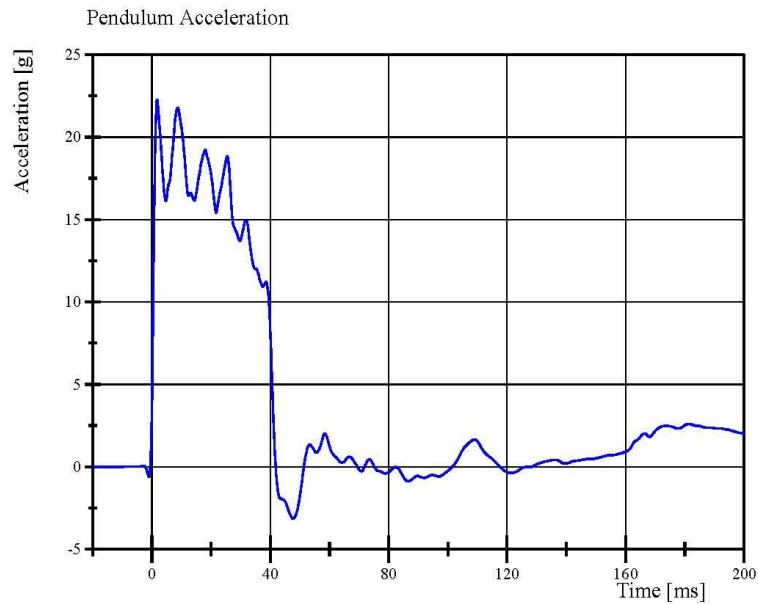


Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 35-1

Test Date: 4/14/2018



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

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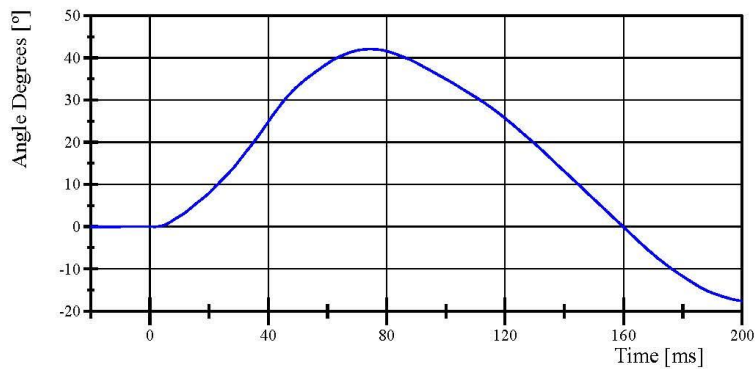
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 35-1

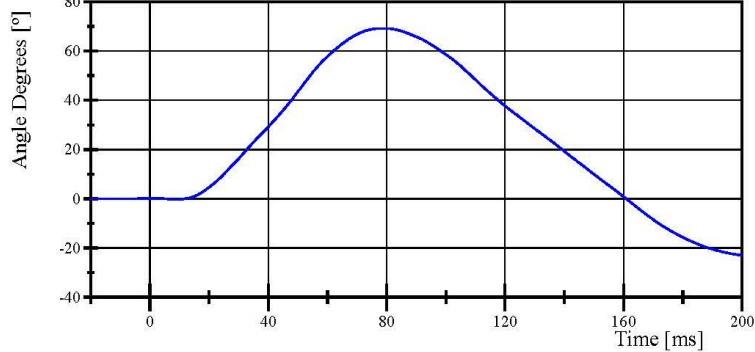
Test Date: 4/14/2018

Pot Rotation at the Base of Neck



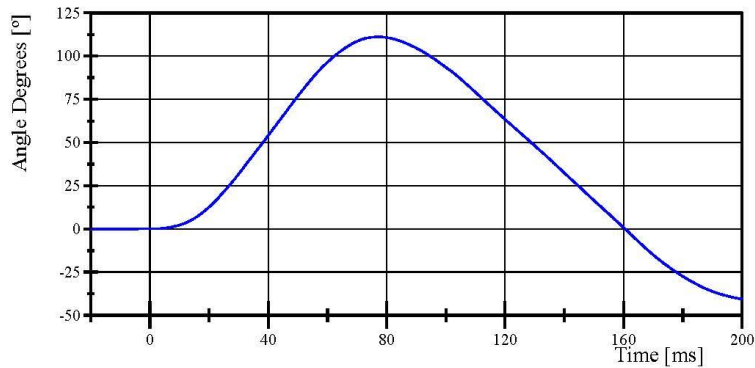
Filter Class: CFC_60
Max: 42.1 ° at 74.4 ms
Min: -17.6 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 69.2 ° at 78.8 ms
Min: -22.9 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 111.1 ° at 77.2 ms
Min: -40.5 ° at 200.0 ms

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

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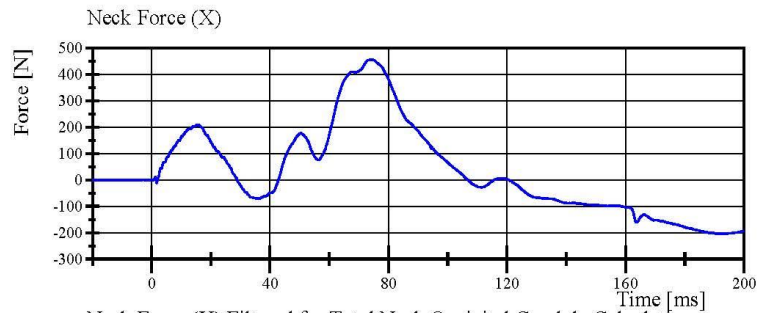


Transportation Research Center Inc.

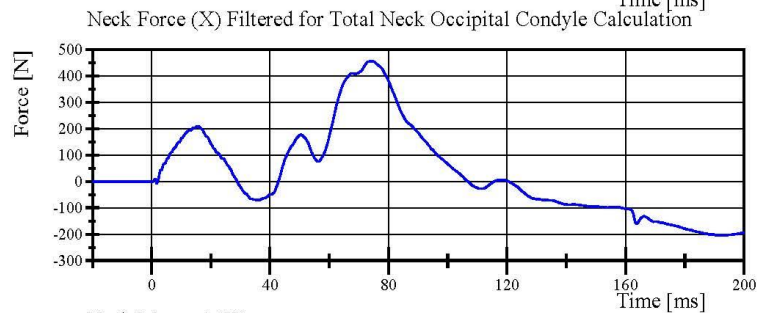
Neck Extension

HIII 5th Serial No. 070 Certification No. 35-1

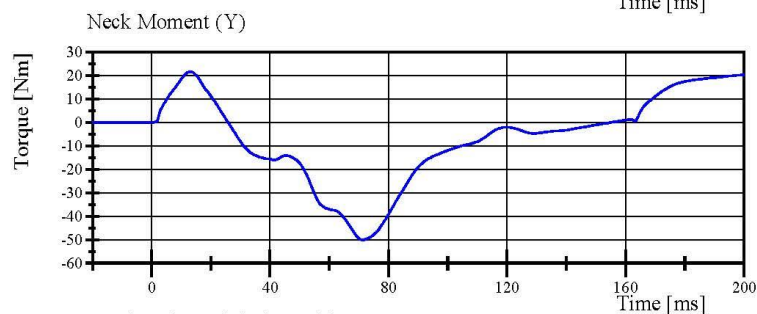
Test Date: 4/14/2018



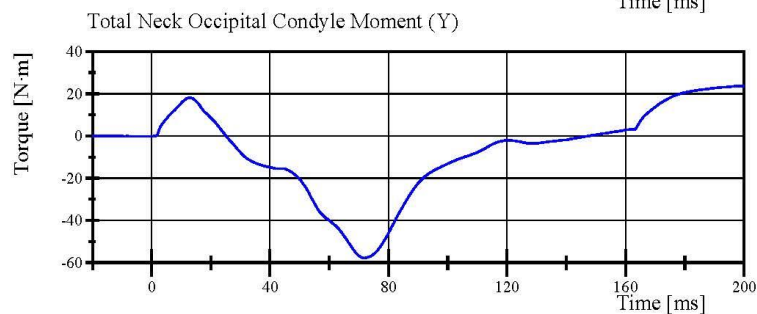
Filter Class: CFC_1000
Max: 456.8 N at 74.1 ms
Min: -204.4 N at 191.5 ms



Filter Class: CFC_600
Max: 456.5 N at 74.2 ms
Min: -204.2 N at 191.5 ms



Filter Class: CFC_600
Max: 21.6 Nm at 13.1 ms
Min: -50.1 Nm at 71.4 ms



Filter Class: Without_(Consta
Max: 23.7 N·m at 199.4 ms
Min: -57.8 N·m at 71.8 ms

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

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Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 070 Certification No. 35-1

Test Date: 4/14/2018

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.704 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,205.9 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-4,234.5 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-51.8 mm	Yes
Internal Hysteresis	69 - 85 %	72.3 %	Yes

Test meets specifications.

Condition: Used

Comments:

Jacket S/N: N/A

Rib #1 S/N: N/A

Rib #2 S/N: N/A

Rib #3 S/N: N/A

Rib #4 S/N: N/A

Rib #5 S/N: N/A

Rib #6 S/N: N/A

Rib Stiffners S/N: N/A

Bib S/N: N/A

Sternum Plate S/N: N/A

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

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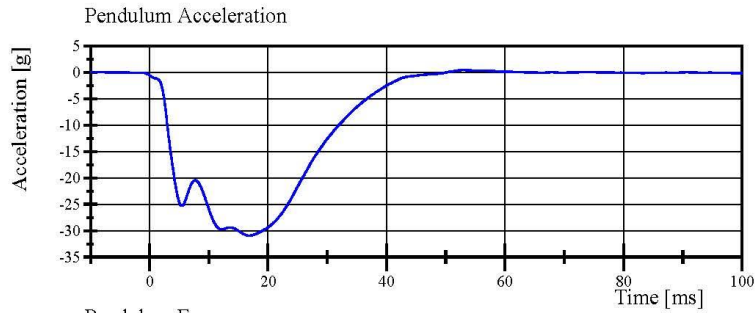


Transportation Research Center Inc.

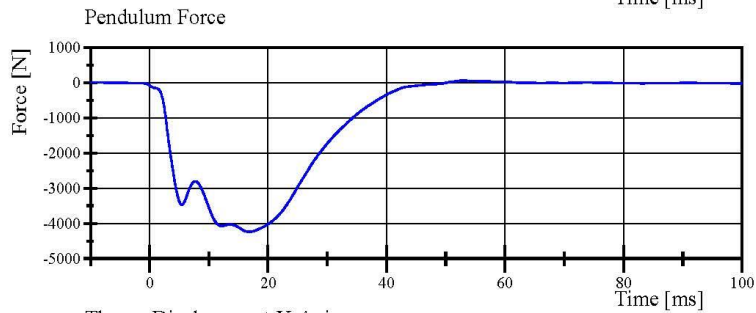
Front Thorax

HIII 5th Serial No. 070 Certification No. 35-1

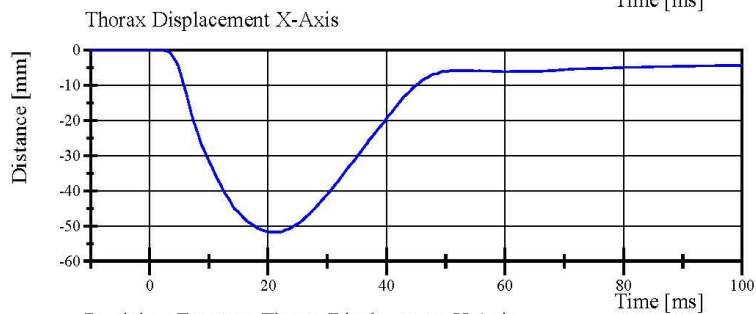
Test Date: 4/14/2018



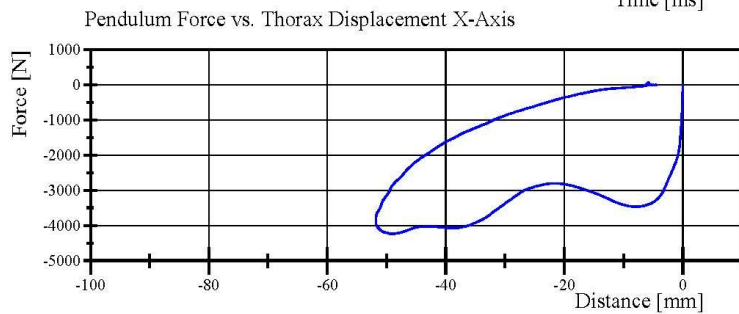
Filter Class: CFC_180
Max: 0.4 g at 53.0 ms
Min: -30.9 g at 16.8 ms



Filter Class: CFC_180
Max: 60.3 N at 53.0 ms
Min: -4,234.5 N at 16.8 ms



Filter Class: CFC_600
Max: 0.0 mm at -9.4 ms
Min: -51.8 mm at 20.7 ms



Filter Class: CFC_180
Max: 60.3 N at -5.8 mm
Min: -4,234.5 N at -49.0 mm

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

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Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 35-1
Test Date: 4/14/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.086 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,869.5 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 05856

Knee Insert S/N: N/A

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

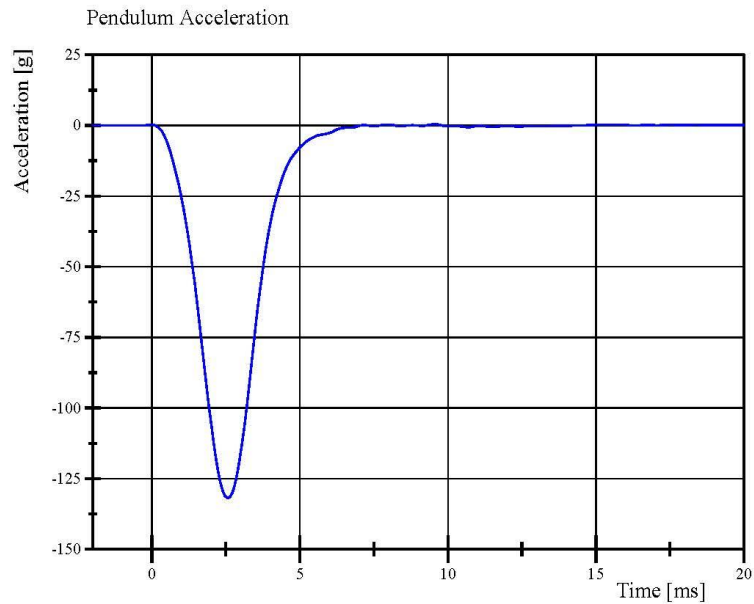
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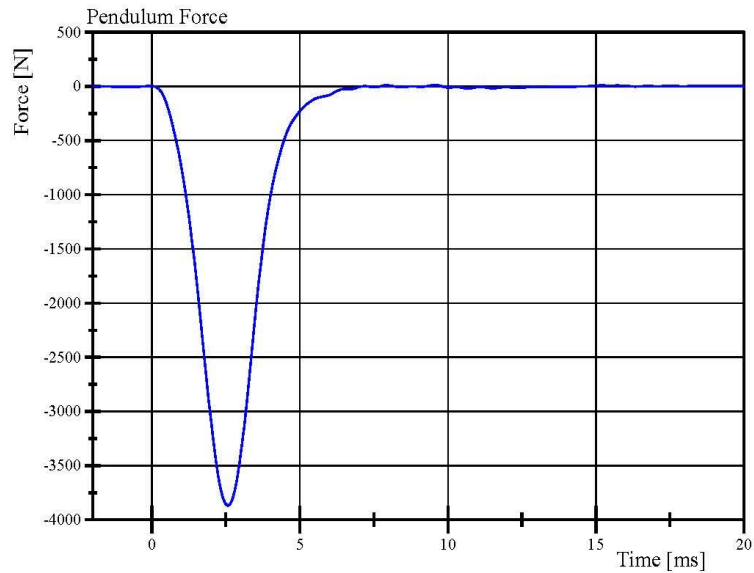


Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 35-1
Test Date: 4/14/2018



Filter Class: CFC_600
Max: 0.4 g at 9.5 ms
Min: -132.0 g at 2.6 ms



Filter Class: CFC_600
Max: 12.2 N at 9.5 ms
Min: -3,869.5 N at 2.6 ms

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

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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 35-1
Test Date: 4/14/2018

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	22.1 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.121 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-4,024.4 N	Yes

Test meets specifications.

Condition: Used

Comments:

Knee Skin S/N: 05269

Knee Insert S/N: N/A

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

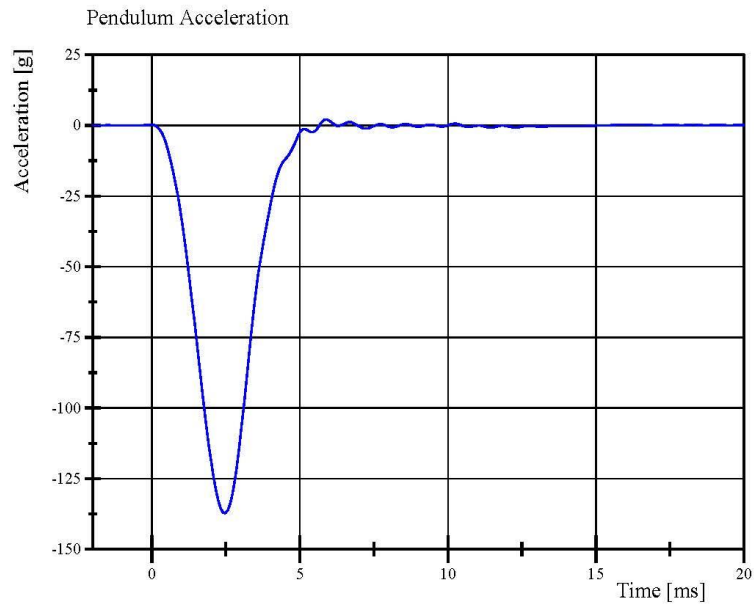
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04.14.2018 07:54:41 1749

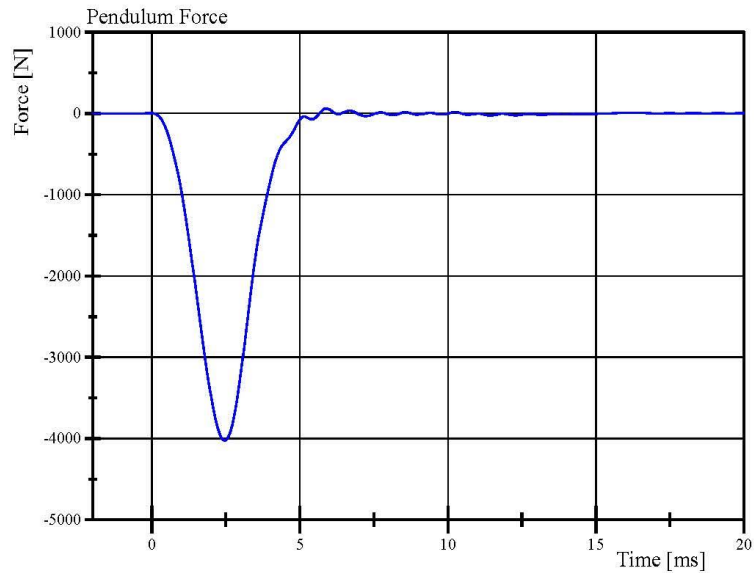


Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 35-1
Test Date: 4/14/2018



Filter Class: CFC_600
Max: 2.0 g at 5.9 ms
Min: -137.2 g at 2.5 ms



Filter Class: CFC_600
Max: 59.7 N at 5.9 ms
Min: -4,024.4 N at 2.5 ms

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

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Transportation Research Center Inc.

Hybrid III Small Female Torso Flexion

NHTSA

Serial Number: 070

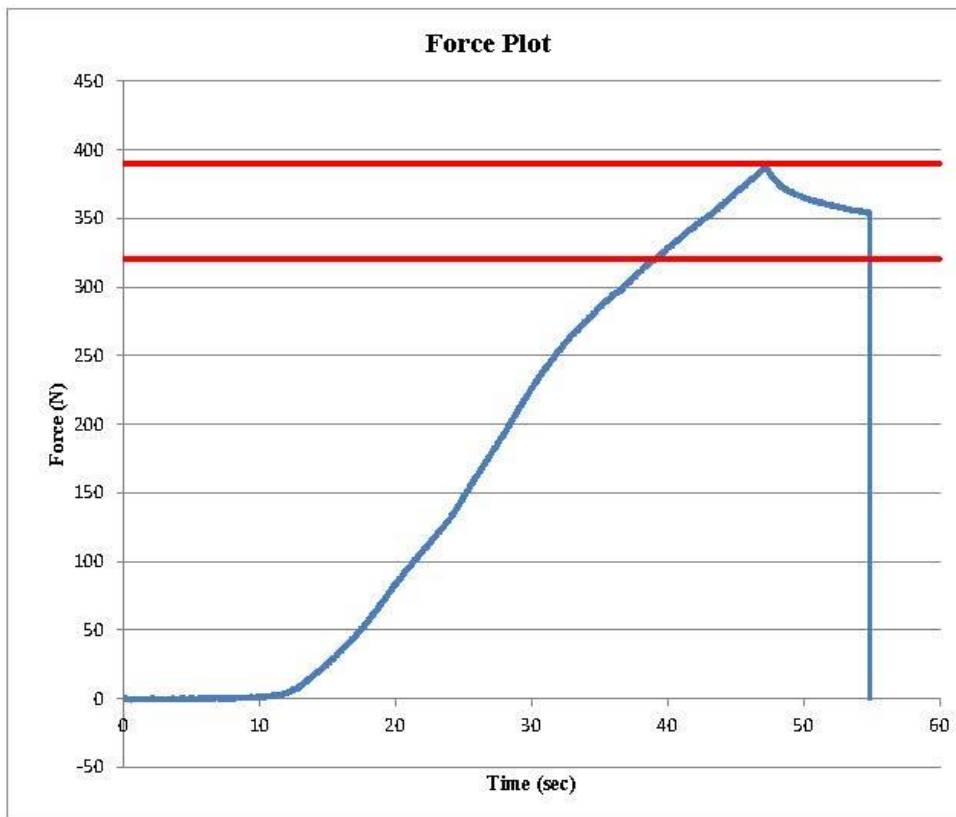
Date: 4/14/2018

Test Number: 1

Time: 9:03



TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.8 °C Pass
Humidity	10 - 70	38 % Pass
Average Angular Velocity	0.5 - 1.5	0.9 deg/sec Pass
Initial Angle	0 - 20	13.81 deg Pass
Peak Force at 45.42°Final	320 - 390	387.58 N Pass
Angle	-8 - 8	2.62 deg Pass



Comments:
 Jacket S/N: N/A
 Abdomen S/N: 0506531
 Pelvis Skin S/N: N/A