

**Final Report Number: NCAP-TRC-16-001**

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

**Ford Motor Company  
2016 Ford F-250 SuperCab Pickup Truck  
NHTSA Number: M20160202**

**PREPARED BY:  
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**Report Date: December 7, 2015**

**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: Impact Laboratory Project Operations Group

Approved By: Melinda Lackey

Approval Date: December 7, 2015

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date \_\_\_\_\_

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

Date \_\_\_\_\_

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15. Supplemental Notes																																																																											
16. Abstract  A 56.0 km/h NCAP Frontal Impact Test was conducted on a 2016 Ford F-250 SuperCab Pickup Truck Pickup Truck, 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 October 29, 2015.  The impact velocity was 56.36 km/h, and the ambient temperature at the barrier face at the time of impact was 21° C. The target vehicle post-test maximum crush was 637 millimeters at vehicle centerline. The test vehicle's performance is as follows:																																																																											
<table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD</th> <th colspan="3">Passenger ATD</th> </tr> <tr> <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 (HIC<sub>15</sub>)</td> <td>NA</td> <td>700</td> <td>435</td> <td>NA</td> <td>700</td> <td>427</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>-34.5</td> <td>mm</td> <td>52</td> <td>-24.7</td> </tr> <tr> <td>3ms Chest Clip</td> <td>Gs</td> <td>60</td> <td>40.5</td> <td>Gs</td> <td>60</td> <td>40.5</td> </tr> <tr> <td>Nij</td> <td>NA</td> <td>1</td> <td>0.33</td> <td>NA</td> <td>1</td> <td>0.36</td> </tr> <tr> <td>Neck Tension</td> <td>Newtons</td> <td>4170</td> <td>1385.3</td> <td>Newtons</td> <td>2620</td> <td>742.7</td> </tr> <tr> <td>Neck Compression</td> <td>Newtons</td> <td>4000</td> <td>-351.5</td> <td>Newtons</td> <td>2520</td> <td>-196.6</td> </tr> <tr> <td>Left Femur Force</td> <td>Newtons</td> <td>10008</td> <td>-214.6</td> <td>Newtons</td> <td>6805</td> <td>-1174.7</td> </tr> <tr> <td>Right Femur Force</td> <td>Newtons</td> <td>10008</td> <td>-1487.3</td> <td>Newtons</td> <td>6805</td> <td>-333.7</td> </tr> </tbody> </table>							Measurement Description	Driver ATD			Passenger ATD			Units	Threshold	Result	Units	Threshold	Result	Head Injury Criteria (HIC <sub>15</sub> )	NA	700	435	NA	700	427	Maximum Chest Compression	mm	63	-34.5	mm	52	-24.7	3ms Chest Clip	Gs	60	40.5	Gs	60	40.5	Nij	NA	1	0.33	NA	1	0.36	Neck Tension	Newtons	4170	1385.3	Newtons	2620	742.7	Neck Compression	Newtons	4000	-351.5	Newtons	2520	-196.6	Left Femur Force	Newtons	10008	-214.6	Newtons	6805	-1174.7	Right Femur Force	Newtons	10008	-1487.3	Newtons	6805	-333.7
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## **1: PURPOSE AND SUMMARY OF 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 August 2013.

### **SUMMARY**

A 2016 Ford F250 SuperCab Pickup Truck impacted the barrier wall at a velocity of 56.36 km/h. The test was performed at Transportation Research Center, Inc. on October 29, 2015. 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 50<sup>th</sup> percentile male anthropomorphic test device (ATD), was placed in the driver seating position and one Part 572O 5<sup>th</sup> 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. 426) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 100 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 637 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:

<b>ATD Position</b>	<b>HIC<sub>15</sub></b>	<b>Nij</b>	<b>Neck Tension (N)</b>	<b>Neck Compression (N)</b>	<b>3 ms Chest Clip (Gs)</b>	<b>Chest Disp. (mm)</b>	<b>Left Femur (N)</b>	<b>Right Femur (N)</b>
Driver (50 <sup>th</sup> Male)	435	0.33	1385.3	-351.5	40.5	-34.5	-214.6	-1487.3
Passenger (5 <sup>th</sup> Female)	427	0.36	742.7	-196.6	40.5	-24.7	-1174.7	-333.7

## **2: OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS**

## DATA SHEET NO. 1

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

#### TEST VEHICLE INFORMATION

NHTSA No.	M20160202
Model Year	2016
Make	Ford
Model	Extended F-250 SuperCab
Body Style	Truck
VIN	1FT7X2B67GEA68784
Body Color	Blue Jeans Metallic
Odometer Reading (km/mi)	24.4 mi
Engine Displacement (L)	6.2
Type/No. Cylinders	8
Engine Placement	Front/Longitudinal
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	4WD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes
Automatic Door Locks (ADLs)	Yes

#### TEST VEHICLE OPTIONS

Traction Control System (TCS)	Yes
Power Steering	Yes
Power Window Auto-Reverse	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:	N/A

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

Yes

#### DATA FROM CERTIFICATION LABEL

Manufactured by	Ford Motor Company	GVWR (kg)	4536.0 (10000 lbs)
Date of Manufacture	09/15	GAWR Front (kg)	2694.0 (5940 lbs)
		GAWR Rear (kg)	2767.0 (6100 lbs)

#### VEHICLE SEATING AND WEIGHT CAPACITY

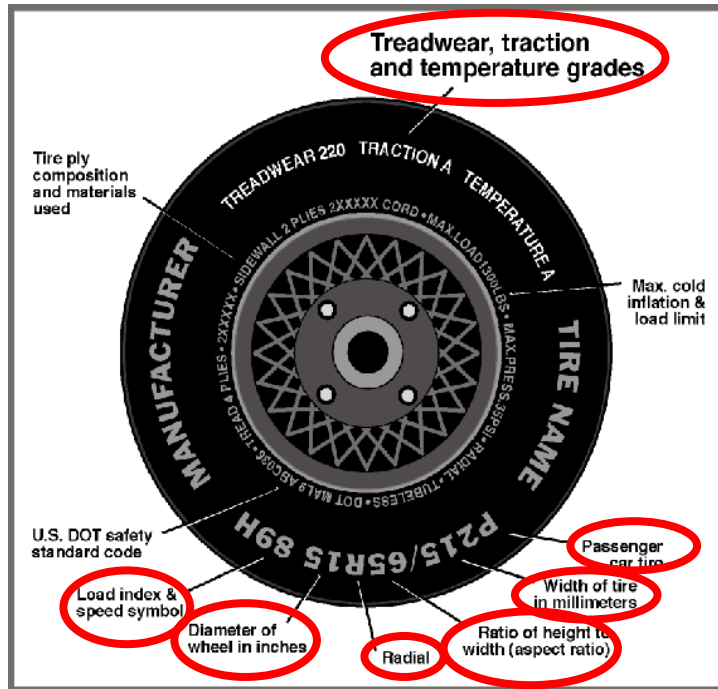
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	N/A	
Number of Occupants	3	3	N/A	6
Capacity Wt. (VCW) (kg)				1388
Cargo Wt. (RCLW) (kg)				979.8

**DATA SHEET NO. 1 (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15



**DATA FROM TIRE PLACARD**

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	450	550
Cold / Test Pressure (kPa)	450	550
Recommended Tire Size	LT275/65R18	LT275/65R18
Tire Size on Vehicle	LT275/65R18	LT275/65R18
Tire Manufacturer	Continental	Continental
Tire Model	Contitrac	Contitrac
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	123/120S	123/120S
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Right	A3B9 HOOR 3315	A3B9 HOOR 3415
DOT Safety Code Left	A3B9 HOOR 3415	A3B9 HOOR 3415

**DATA SHEET NO. 1 (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

**TEST VEHICLE WEIGHTS**

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	892.8	682.6		947.8	769.4	
Right	kg	922.0	601.6		947.0	703.0	
Ratio	%	58.6	41.4		56.3	43.7	
Totals	kg	1814.8	1284.2	3099.0	1894.8	1472.4	3367.2

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	3099.0
Weight of 1 P572E ATD & 1 P572O ATD	kg	139.3
Rated Cargo/Luggage Weight (RCLW) <sup>1</sup>	kg	136.0
Vehicle Target Weight (TVTW)	kg	3374.3

**TEST VEHICLE ATTITUDES AND CG**

	Units	LF	RF	LR	RR	CG (aft of front)
As Delivered	mm	1050	1070	1092	1118	1674
As Tested	mm	1044	1065	1086	1099	1767
Post Test	mm	1142	1031	1126	1046	

**GENERAL TEST VEHICLE DATA**

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	4040
Total Vehicle Length at Left Side	mm	6153
Total Vehicle Length at Centerline	mm	6328
Total Vehicle Length at Right Side	mm	6163
Weight of Ballast in Cargo Area	kg	50.8
Weight of Vehicle Components Removed	kg	0.0
Amount of Stoddard Solvent in Fuel Tank	liters	123.2

**LIST OF COMPONENTS REMOVED TO MEET TEST WEIGHT:** None

<sup>1</sup> Rated Cargo/Luggage Weight limited to 136.0 kg or 300.0 lbs.

**DATA SHEET NO. 1 (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
Test Date: 10/29/15

**TARGET VEHICLE STRUCTURAL MEASUREMENT**

	<b>Elements</b>	<b>Pre-Test (mm)</b>
1	Total Length	6328
2	Total Width	2025
3	Bumper Top Height	748
4	Bumper Bottom Height	488
5	Longitudinal Member Top Height	595
6	Distance Between Longitudinal Members	772
7	Longitudinal Member Width	98
8	Engine Top Height	1410
9	Engine Bottom Height	490
10	Engine and Gearbox Width	800
11	Front Bumper-Engine Distance	796
12	Front Shock Absorber Fixing Height	885
13	Bonnet Leading Edge Height	1355
14	Front Shock Absorber Fixing Width	1072
15	Front Bumper – Front Axle Distance	956
16	Front Axle – A-Pillar Distance	750
17	A-Pillar – B-Pillar Distance	1060
18	B-Pillar – Rear Axle Distance	2180
19	B-Pillar – C-Pillar Distance	600
20	Roof Sill Bottom Height	1887
21	Roof Sill Top Height	1981
22	Floor Sill Bottom Height	642
23	Floor Sill Top Height	684

## DATA SHEET NO. 2

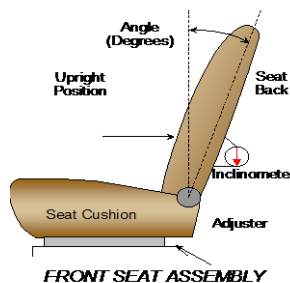
### SEAT ADJUSTMENT, FUEL SYSTEM AND STEERING WHEEL DATA

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

#### 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:	16.9
Passenger Seat back angle:	19.5

#### 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	302	24/47
Passenger Seat	320	0/50

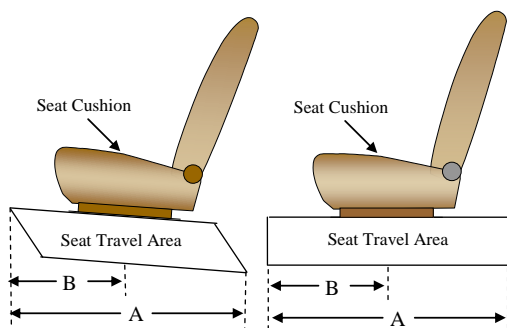
#### SEAT BELT UPPER ANCHORAGE

Describe the method of positioning seat belt upper anchorages.

Driver: Uppermost, Positioned according to Form 1

Passenger: Uppermost, Positioned according to Ford Motor Company's instructions on test day.

	Total No. of Positions	Placed in Position No.
Driver Seat	4, numbered 0 to 3	0, Uppermost
Passenger Seat	4, numbered 0 to 3	0, Uppermost



**DATA SHEET NO. 2 (CONTINUED)**

**SEAT ADJUSTMENT, FUEL SYSTEM AND STEERING WHEEL DATA**

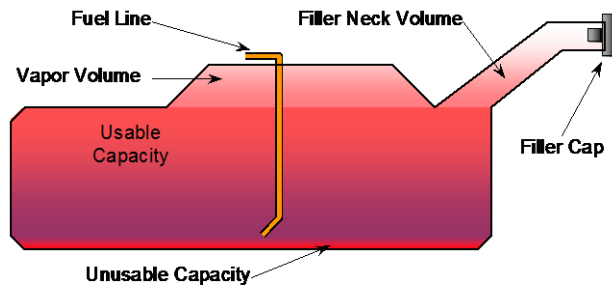
Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

**FUEL TANK CAPACITY**

	<b>Liters</b>
Usable Capacity of "Standard Tank"	132
Usable Capacity of "Optional Tank"	N/A
92%-94% of Usable Capacity	123.2
Actual Amount of Solvent Used	123.2
1/3 of Usable Capacity	41.1

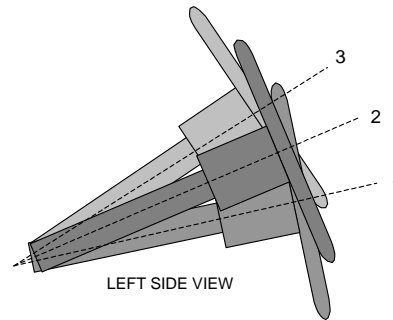
The vehicle is equipped with an electric fuel pump. If ignition key is at "ON" position and engine is not running, the fuel pump operates for 2 seconds. If the engine is running, then the fuel pump will run continuously.



**VEHICLE FUEL TANK ASSEMBLY**

**STEERING COLUMN ADJUSTMENT**

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

**STEERING COLUMN POSITIONS**

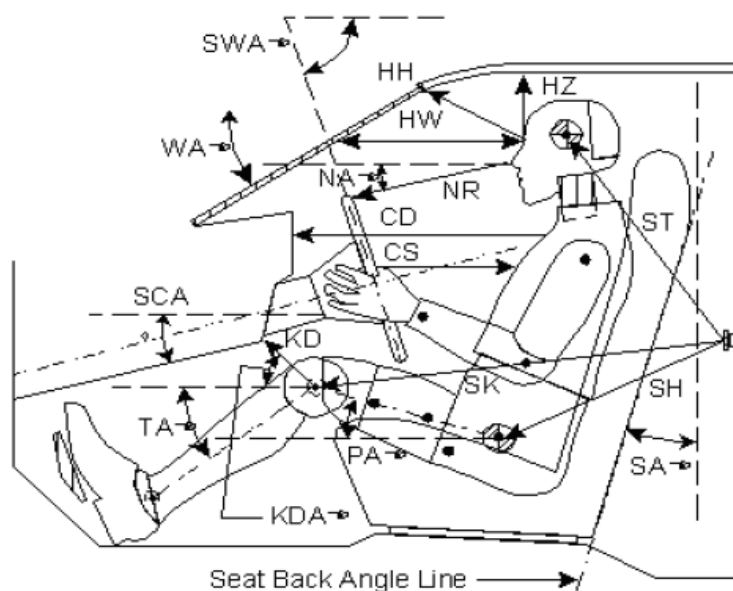
	<b>Degrees</b>	<b>Fore/Aft Position (mm)</b>
Lowermost Position No. 1	66.5	300
Geometric Center Position No. 2	64.6	312
Uppermost Position No. 3	62.8	324
Telescoping Steering Wheel Travel		24
Test Position	64.6	312

### DATA SHEET NO. 3

#### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15



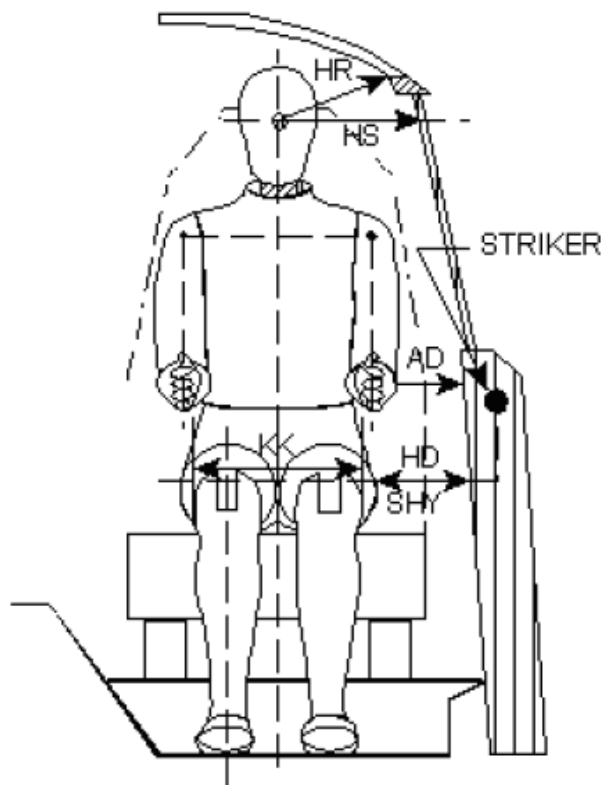
Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		36.3		
SWA°	Steering Wheel Angle		64.6		
SCA°	Steering Column Angle		25.4		
SA°	Seat Back Angle (on headrest post)		16.9		19.5 rwd
HZ	Head to Roof (Z)	230		292	
HH	Head to Header	480		450	
HW	Head to Windshield	680		723	
NR	Nose to Rim	425	9.0		
CD	Chest to Dash	592		487	
CS	Chest to Steering Hub	368			
RA	Rim to Abdomen	218			
KDL	Left Knee to Dash	219	30.0	145	26.0
KDR	Right Knee to Dash	217	30.0	153	26.0
PA°	Pelvic Angle		21.3		20.6
TA°	Tibia Angle		50.6		73.3
SK	Striker to Knee	718	6.4 up	808	7.5
ST	Striker to Head	701	72	662	62.9
SH	Striker to H-Point	325	1 down	471	3.3 above

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15



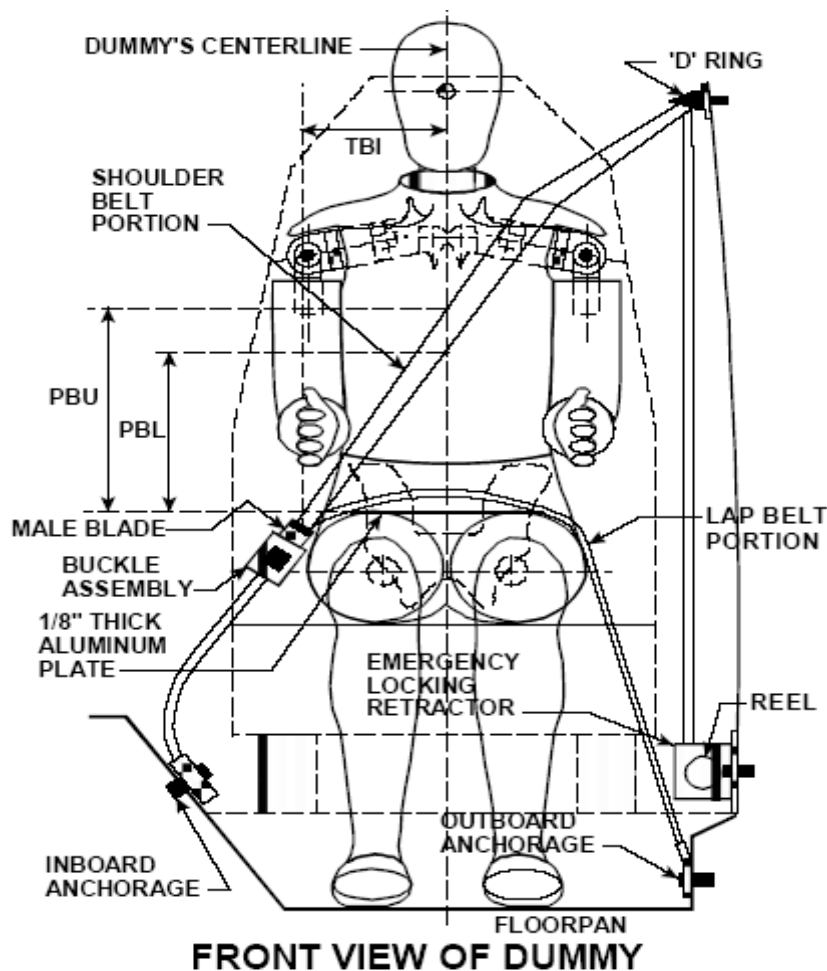
Code	Measurement Description	Driver	Passenger
AD	Arm to Door	139	105
HD	H-Point to Door	228	265
HR	Head to Side Header	235	304
HS	Head to Side Window	396	416
KK	Knee to Knee	340	160
SHY	Striker to H-Point (Y Direction)	274	292
AA	Ankle to Ankle	335	150

## DATA SHEET NO. 5

### SEAT BELT POSITIONING DATA

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15



#### SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
<b>PBU</b> – Top surface of reference to belt upper edge	mm	337	284
<b>PBL</b> – Top surface of reference to belt lower edge	mm	260	197

#### BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Shoulder belt length as measured on ATD	mm	1305	1375
Lap belt length as measured on ATD	mm	1015	1110
Remainder of belt on reel	mm	725	525
Total belt length for continuous webbing systems	mm	3045	3010

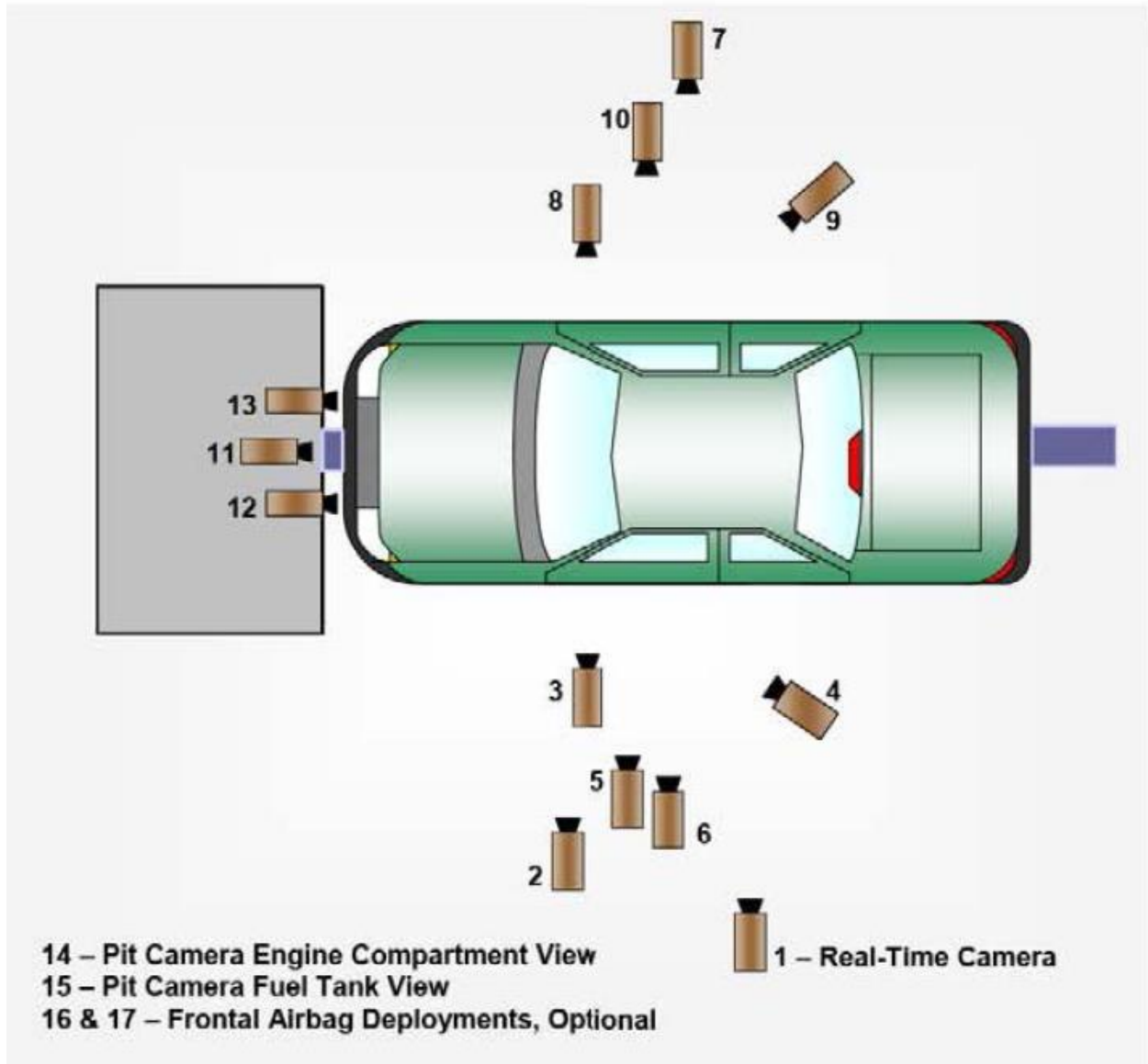
**DATA SHEET NO. 6**

**HIGH SPEED CAMERA LOCATIONS AND DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
Test Date: 10/29/15

**CAMERA POSITIONS FOR FRONTAL IMPACTS**



**DATA SHEET NO. 6 (CONTINUED)**

**HIGH SPEED CAMERA LOCATIONS AND DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

**CAMERA LOCATIONS**

No.	Camera View	Location (mm)			Lens (mm)	Frame Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-930	-6070	-1379	Zoom	30
2	Driver Close-Up	-1560	-6387	-1673	Zoom	1000
3	Left Front Half	-1126	-6150	-1521	28	1000
4	Left Angle	-4101	-3147	-2180	Zoom	1000
5	Steering Column - Top	-1778	-6465	-2060	50	1000
6	Steering Column – Bottom	-1776	-6190	-1557	50	1000
7	Right Overall	-2347	6252	-1263	12.5	1000
8	Passenger Close-Up	-1476	6258	-1645	50	1000
9	Right Front Half	-4239	3243	-2115	Zoom	1000
10	Right Angle	-1503	6063	-1419	28	1000
11	Windshield	-128	0	-2649	8.5	1000
12	Driver Windshield	-128	-425	-2649	25	1000
13	Passenger Windshield	-126	419	-2649	25	1000
14	Pit Front	-1072	0	3128	25	1000
15	Pit Rear	-3922	0	3159	25	1000
16	Onboard Driver Airbag (Optional)	-1527	290	-1708	12.5	1000
17	Onboard Passenger Airbag (Optional)	-1527	-370	-1708	12.5	1000

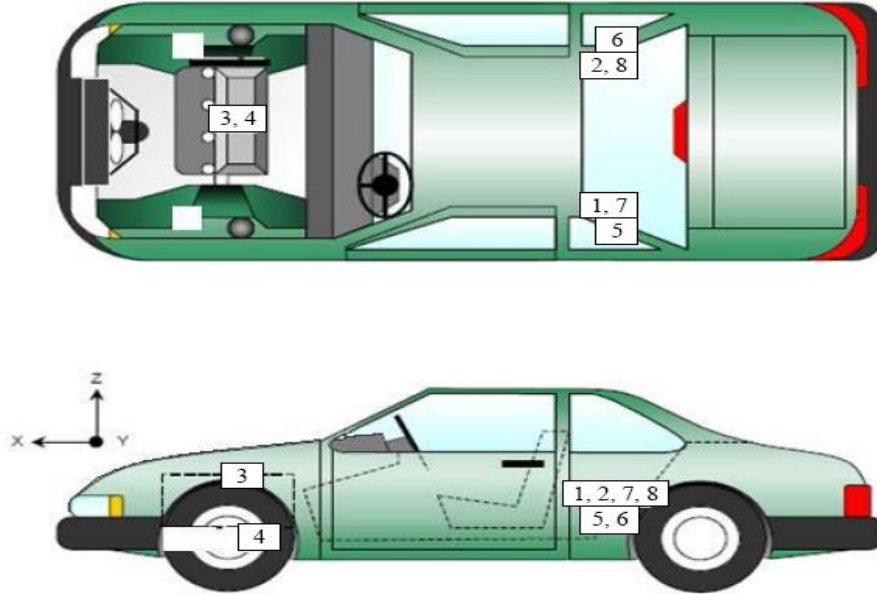
Reference Points: +X – forward of impact plane  
 +Y – right of monorail center  
 +Z – into ground

**DATA SHEET NO. 7**

**VEHICLE ACCELEROMETER DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15



**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

No.	Camera View	Location (mm)		
		X	Y	Z
1	Left Rear Accelerometer – X Direction	2923	-505	-867
2	Right Rear Accelerometer – X Direction	2908	495	-875
3	Engine Top X	5246	290	-1210
4	Engine Bottom X	4948	70	-535
5	Left Rear Accelerometer – Z Direction	2923	-505	-867
6	Right Rear Accelerometer – Z Direction	2908	495	-875
7	Left Rear Accelerometer – X Direction Redundant	2923	-535	-867
8	Right Rear Accelerometer- X Direction Redundant	2908	525	-875

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

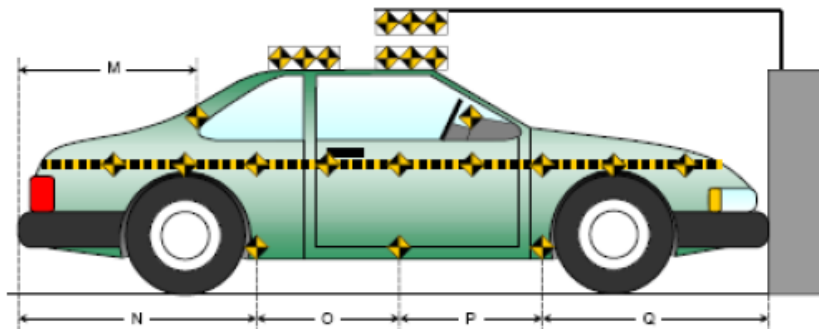
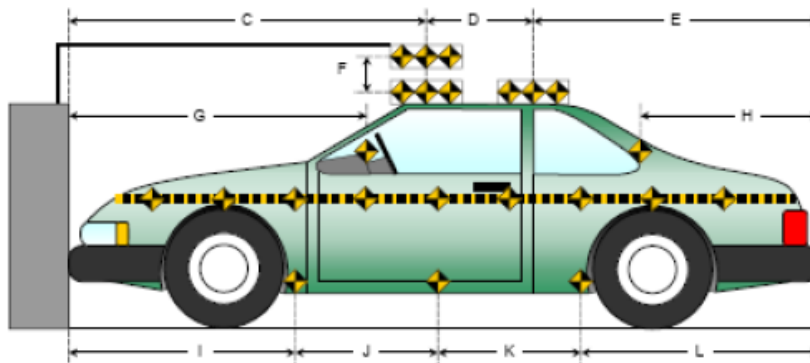
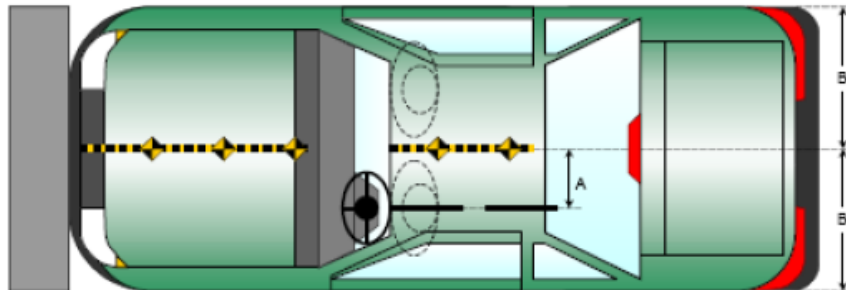
## DATA SHEET NO. 8

### PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

Item	Value
A	480
B	1012
C	2525
D	625
E	3525
F	300
G	1900
H	3240
I	1531
J	1465
K	1436
L	2240
M	3235
N	2240
O	1434
P	1460
Q	1526



All units in millimeters

## DATA SHEET NO. 9

### LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

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: 2016 Ford F-250 SuperCab Pickup Truck  
Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
Test Date: 10/29/15

**INSTRUMENTATION**

<b>Instrumentation</b>	<b>Number of Channels Collected</b>
Driver Dummy Accelerometers	44
Passenger Dummy Accelerometers	44
Vehicle Structure Accelerometers	8
<b>Total</b>	<b>100</b>

**CAMERA COVERAGE**

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

**DATA SHEET NO. 11**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck

NHTSA No.: M20160202

Test Program: NCAP Frontal Impact

Test Date: 10/29/15

**TEST DUMMY INFORMATION AND CONTACT LOCATIONS**

Description	Driver	Passenger
Dummy Type / Serial No.	Hybrid III 50th/ 037	Hybrid III 5th/ 426
Head Contact	Head rest, Airbag	Head rest, Airbag
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)	None	None
Seat Back Failure	None	None

**POST-TEST STRUCTURAL OBSERVATIONS**

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Cracked at lower left and right corners
Window Damage	None
Other Notable Effects	Right front tire flattened

**VEHICLE REBOUND FROM BARRIER**

Measured Parameter	Units	Value
Left Side	mm	794
Center	mm	800
Right Side	mm	875
Average	mm	823

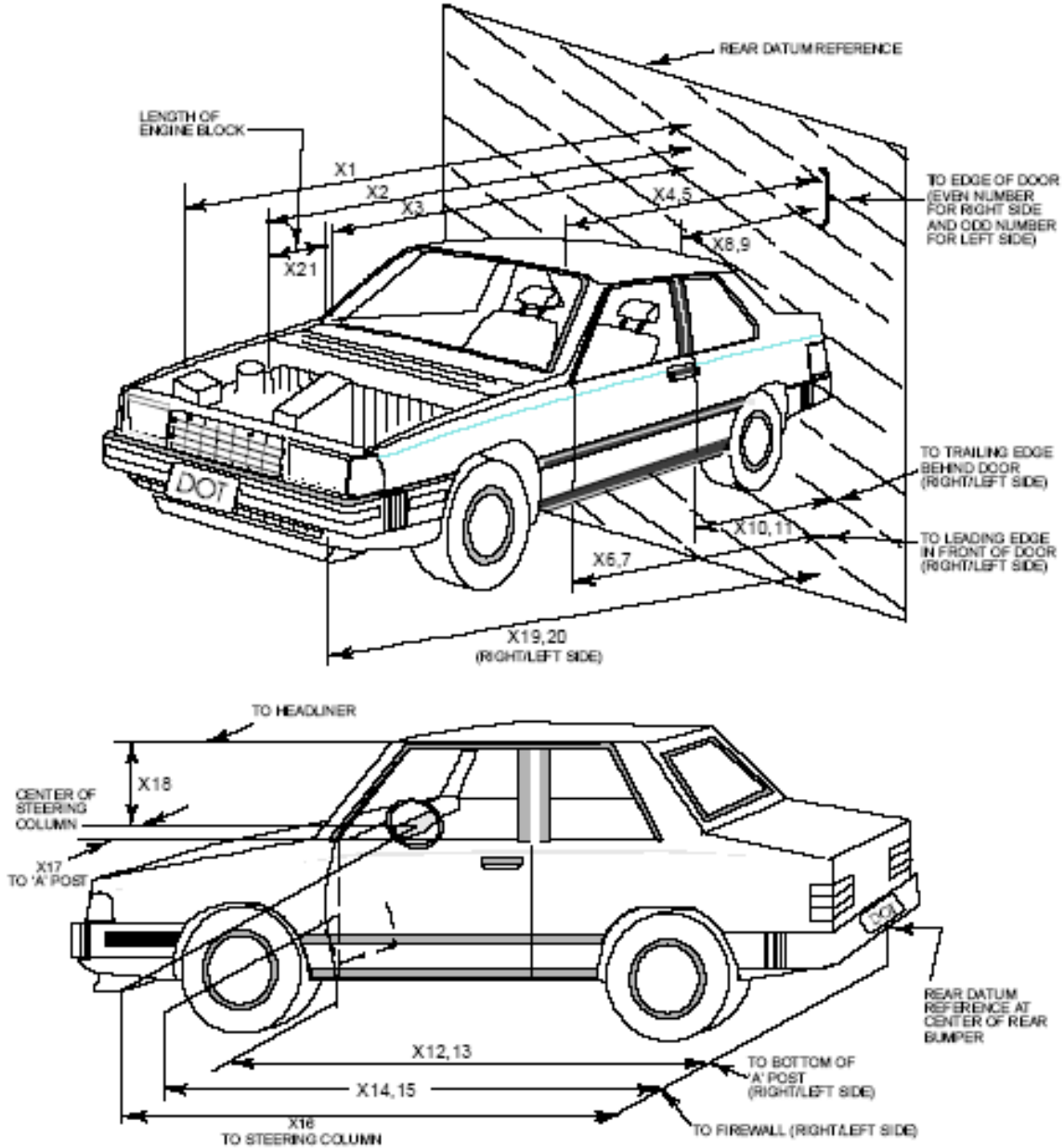
**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

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
Other	No	N/A	No	N/A

DATA SHEET NO. 12

VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck NHTSA No.: M20160202  
Test Program: NCAP Frontal Impact Test Date: 10/29/15



**DATA SHEET NO. 12 (CONTINUED)**  
**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

No.	Measurement Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	6328	5691	637
2	Rear Surface of Vehicle (RSOV) to Front of Engine	5511	5441	70
3	RSOV to Firewall	5085	5108	-23
4	RSOV to Upper Leading Edge of Right Door	4703	4721	-18
5	RSOV to Upper Leading Edge of Left Door	4713	4722	-9
6	RSOV to Lower Leading Edge of Right Door	4588	4599	-11
7	RSOV to Lower Leading Edge of Left Door	4593	4597	-4
8	RSOV to Upper Trailing Edge of Right Door	3472	3490	-18
9	RSOV to Upper Trailing Edge of Left Door	3483	3492	-9
10	RSOV to Lower Trailing Edge of Right Door	3473	3481	-8
11	RSOV to Lower Trailing Edge of Left Door	3480	3484	-4
12	RSOV to Bottom of "A" Post-of Right Side	4613	4618	-5
13	RSOV to Bottom of "A" Post-of Left Side	4620	4616	4
14	RSOV to Firewall, Right Side	5086	5119	-33
15	RSOV to Firewall, Left Side	5059	5094	-35
16	RSOV to Steering Column	4188	4171	17
17	Center of Steering Column to "A" Post	320	275	45
18	Center of Steering Column to Headliner	470	480	-10
19	RSOV to Right Side of Front Bumper	6163	5711	452
20	RSOV to Left Side of Front Bumper	6156	5661	495
21	Length of Engine Block	500	500	0
RD	RSOV to Right Side of Dash Panel	4518	4532	-14
CD	RSOV to Center of Dash Panel	4463	4471	-8
LD	RSOV to Left Side of Dash Panel	4493	4513	-20

All Dimensions in mm

**DATA SHEET NO. 13**

**ACCIDENT INVESTIGATION DIVISION DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

**VEHICLE INFORMATION**

VIN: 1FT7X2B67GEA68784  
 Vehicle Size Category: Extended Cab Pickup

Wheelbase: 4040  
 Test Weight (kg): 3367.2

**ACCELEROMETER DATA**

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

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

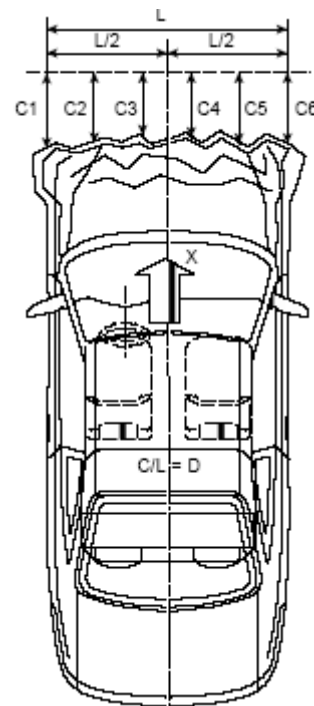
Integration Algorithm: Trapezoidal

Linearity: > 99%

Impact Velocity (km/h): 56.36

Velocity Change (km/h): 64.53

Time of Separation (ms): 145



**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	6153	5661	492
C2	Crush zone 2 at left side	mm	6263	5660	603
C3	Crush zone 3 at left side	mm	6278	5676	602
C4	Crush zone 4 at right side	mm	6278	5694	584
C5	Crush zone 5 at right side	mm	6268	5731	537
C6	Crush zone 6 at right side	mm	6163	5711	452
L	C1 to C6	mm	1524	1502	22

**DATA SHEET NO. 14**

**VEHICLE INTRUSION MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

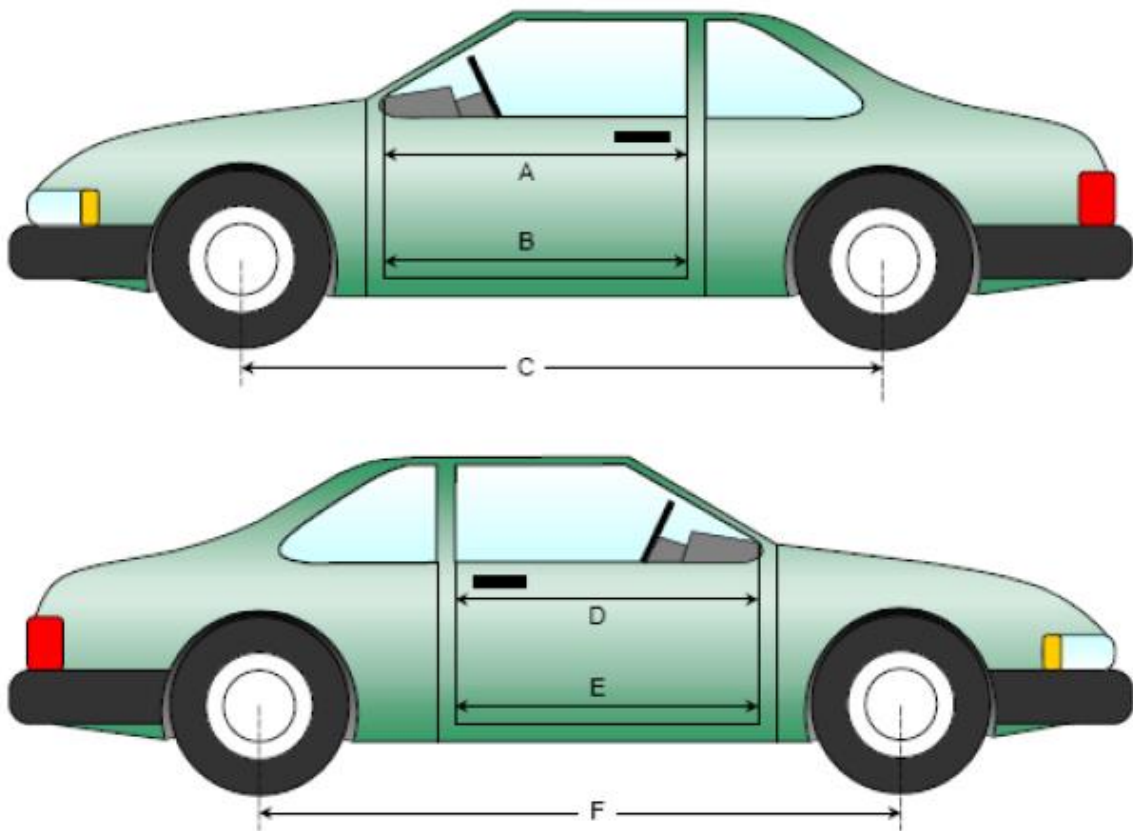
NHTSA No.: M20160202  
 Test Date: 10/29/15

**DOOR OPENING WIDTH**

No.	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1110	1085	25
B	Left Side Lower	mm	1090	1080	10
C	Right Side Upper	mm	1110	1089	21
D	Right Side Lower	mm	1100	1092	8

**WHEELBASE MEASUREMENTS**

No.	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	4045	3810	235
F	Right Side Wheelbase	mm	4040	4030	10



**DATA SHEET NO. 14 (CONTINUED)**

**VEHICLE INTRUSION MEASUREMENTS**

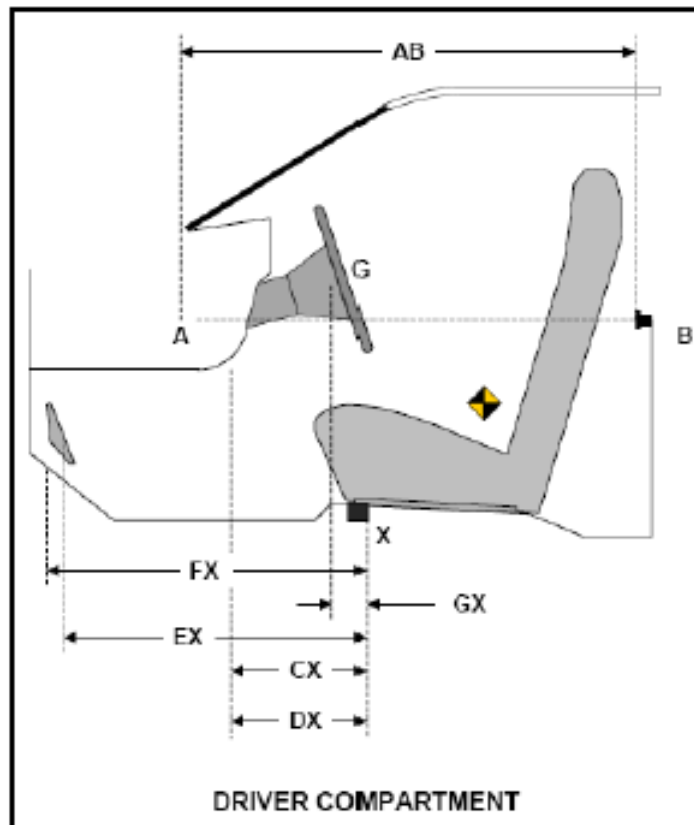
Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

**DRIVER COMPARTMENT INTRUSION**

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	1040	1015	25
CX	Left Knee Bolster to X	mm	305	315	-10
DX	Right Knee Bolster to X	mm	290	310	-20
EX	Brake Pedal to X	mm	525	505	20
FX	Foot Rest to X	mm	525	530	-5
GX	Center of Steering Column Wheel Hub to X	mm	63	42	21

X = Front of Seat Track (Stationary)



**DATA SHEET NO. 15**

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
 Test Date: 10/29/15

Please provide windshield mounting details.

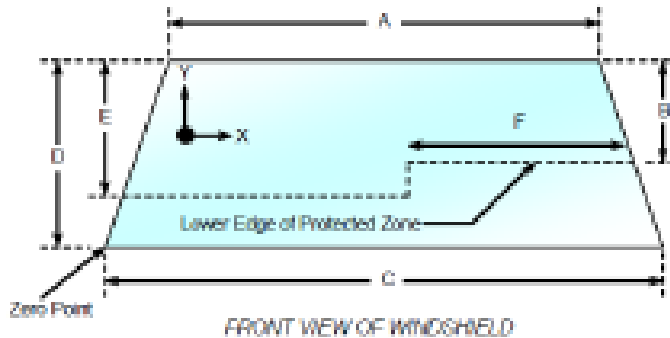
The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicle not equipped with occupant passive restraint and 50% for each side of the windshield for vehicle which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21° C

**WINDSHIELD PERIPHERY MEASUREMENTS**

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2326	2326	100
Right Side	2326	2326	100
Total	4652	4652	100

Item	Units	Value
A	mm	1440
B	mm	365
C	mm	1772
D	mm	720
E	mm	440
F	mm	655



**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: 2016 Ford F-250 SuperCab Pickup Truck  
Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
Test Date: 10/29/15

**FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA**

Temperature at Time of Impact: 21.3°C

Test Time: 19:32

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: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Frontal Impact

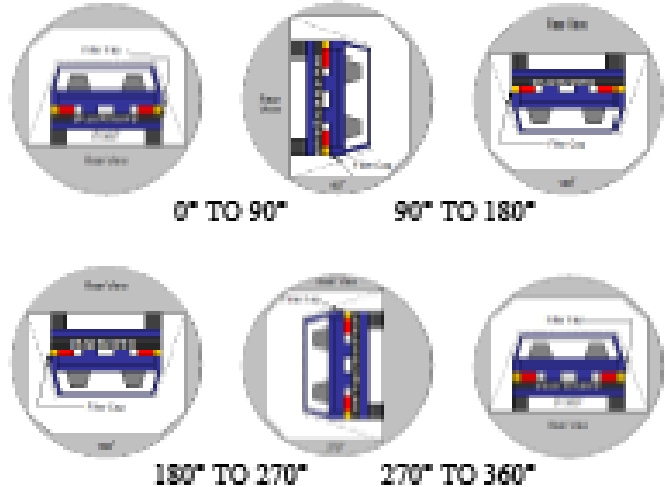
NHTSA No.: M20160202  
 Test Date: 10/29/15

1. The specified fixture rollover rate for each 90° of rotation is 50 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	1680

**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**

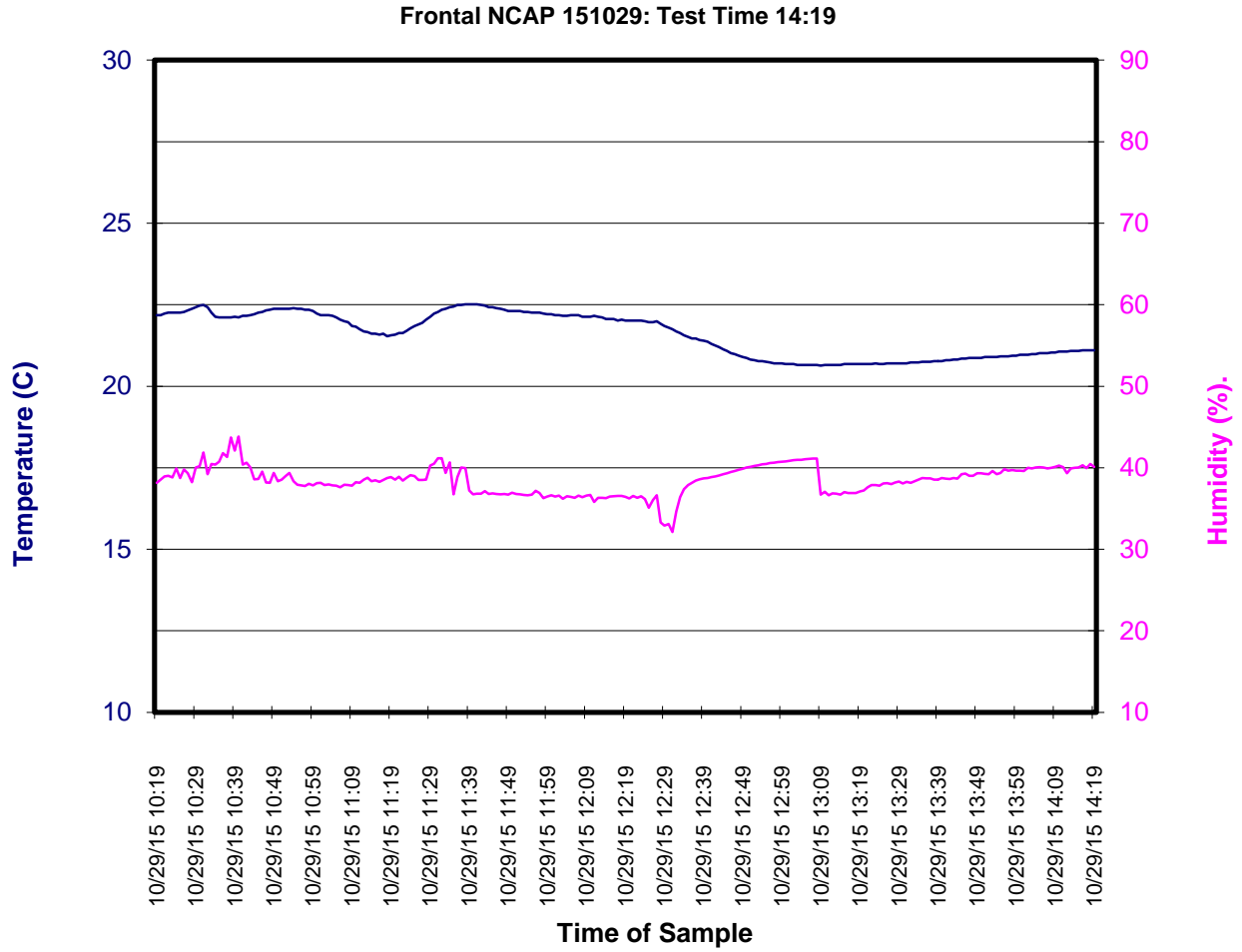
Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

**DATA SHEET NO. 17**

**DUMMY/VEHICLE TEMPERATURE STABILIZATION**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
Test Program: NCAP Frontal Impact

NHTSA No.: M20160202  
Test Date: 10/29/15



**APPENDIX A**  
**PHOTOGRAPHS**

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5	Tire Placard	A-7
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7	Left Rear 3-4 View, as Received	A-8
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12	Pre-Test Right View of Test Vehicle	A-10
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14	Pre-Test Right Front 3-4 View	A-11
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18	Pre-Test Windshield View	A-13
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22	Pre-Test Fuel Filler Cap View	A-15
23	Post-Test Fuel Filler Cap View	A-16
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25	Post-Test Front Underbody View	A-17
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25b	Post-Test Mid Front Underbody View	A-18
25c	Pre-Test Mid Underbody View	A-18
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25e	Pre-Test Mid Rear Underbody View	A-19
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27	Post-Test Rear Underbody View	A-21
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29	Post-Test Dummy Cable Routing	A-22
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29b	Post-Test Dummy Cable Routing	A-23
30	Pre-Test Driver Dummy Front View	A-23
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**TABLE OF PHOTOGRAPHS (CONTINUED)**

<b>No.</b>	<b>Description</b>	<b>Page</b>
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<b>34</b>	<b>Pre-Test Driver Dummy and Vehicle Interior View</b>	<b>A-25</b>
<b>35</b>	<b>Post-Test Driver Dummy and Vehicle Interior View</b>	<b>A-26</b>
<b>36</b>	<b>Pre-Test Driver's Seat Fore-Aft Markings</b>	<b>A-26</b>
<b>37</b>	<b>Post-Test Driver's Seat Fore-Aft Markings</b>	<b>A-27</b>
<b>38</b>	<b>Pre-Test View of Belt Anchorage for Driver Dummy</b>	<b>A-27</b>
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<b>57</b>	<b>Pre-Test Passenger Seat Fore-Aft Markings</b>	<b>A-37</b>
<b>58</b>	<b>Post-Test Passenger Seat Fore-Aft Markings</b>	<b>A-37</b>
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<b>69</b>	<b>Post-Test Passenger Dummy Contact With Headrest</b>	<b>A-43</b>

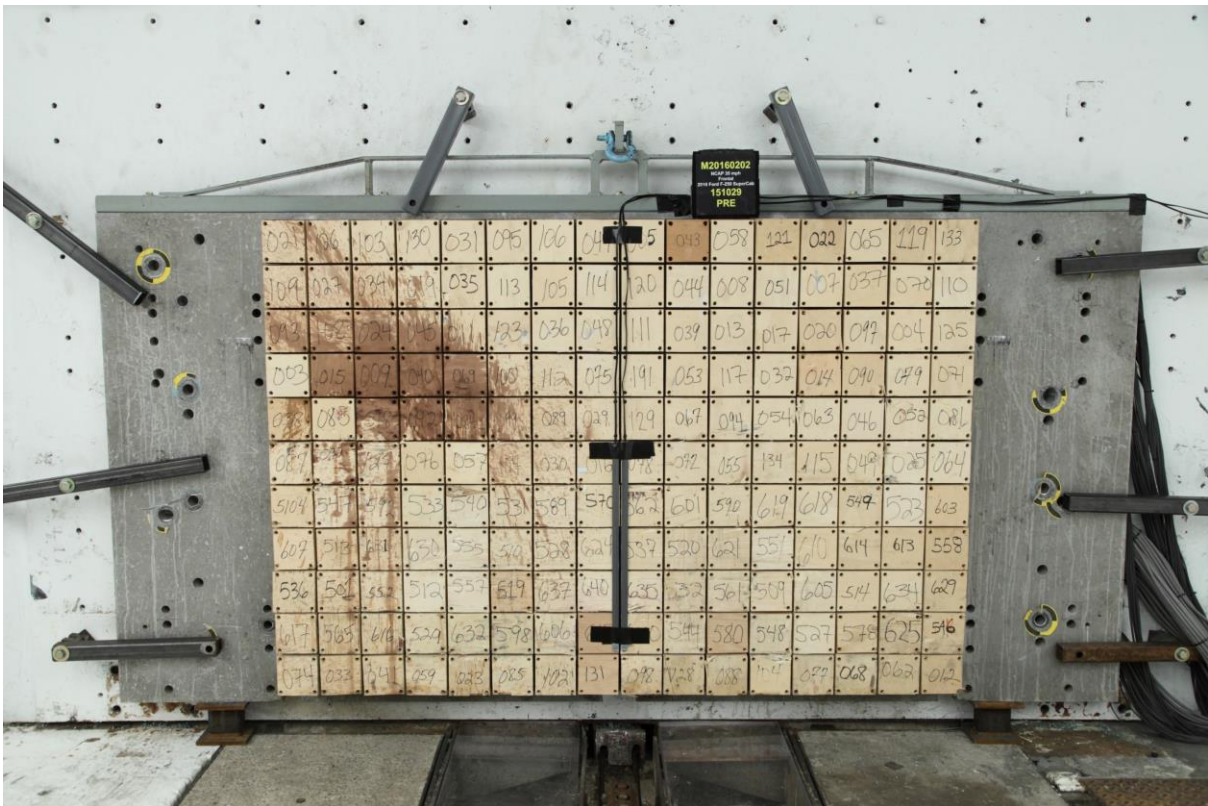
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**001 Load Cell Location**



**002 Pre-Test Load Cell Wall**

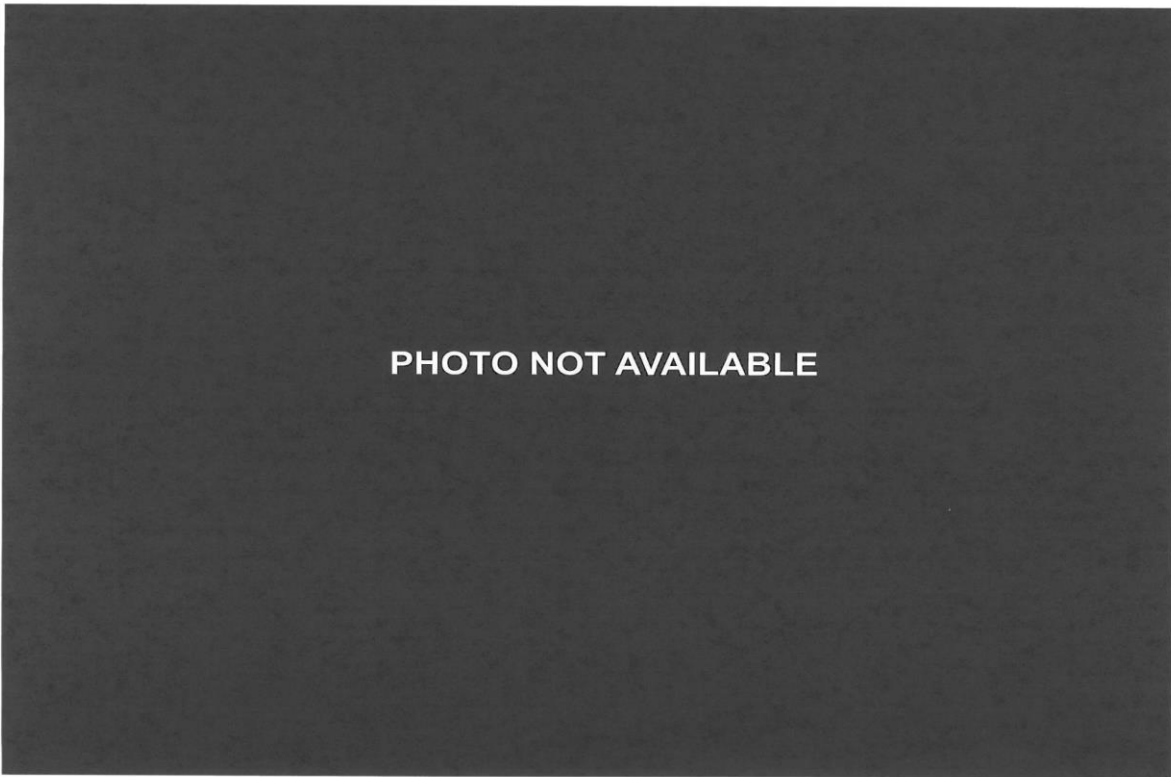
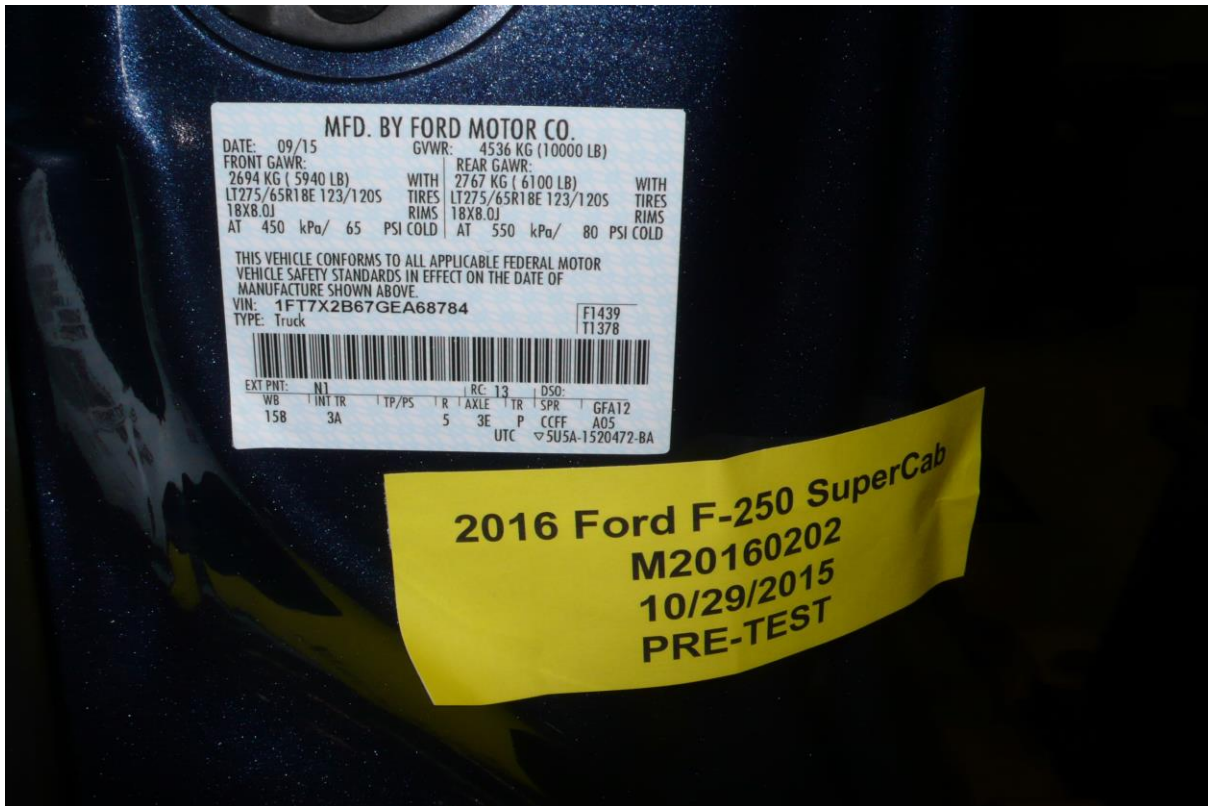


PHOTO NOT AVAILABLE

003 Post-Test Load Cell Wall



004 Manufacturer's Label



**005 Tire Placard**



**006 2016 Ford F-250 SuperCab Frontal As Delivered**



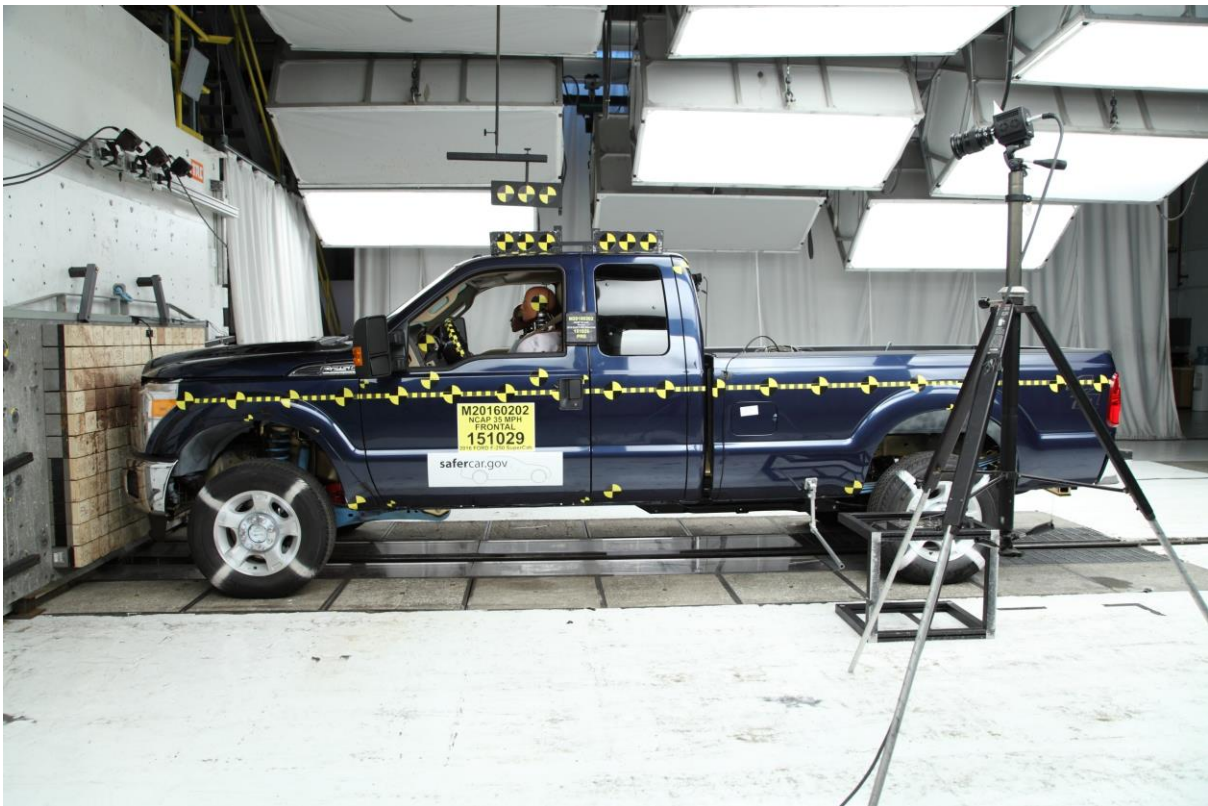
**007 Left Rear 3-4 View, as Received**



**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**



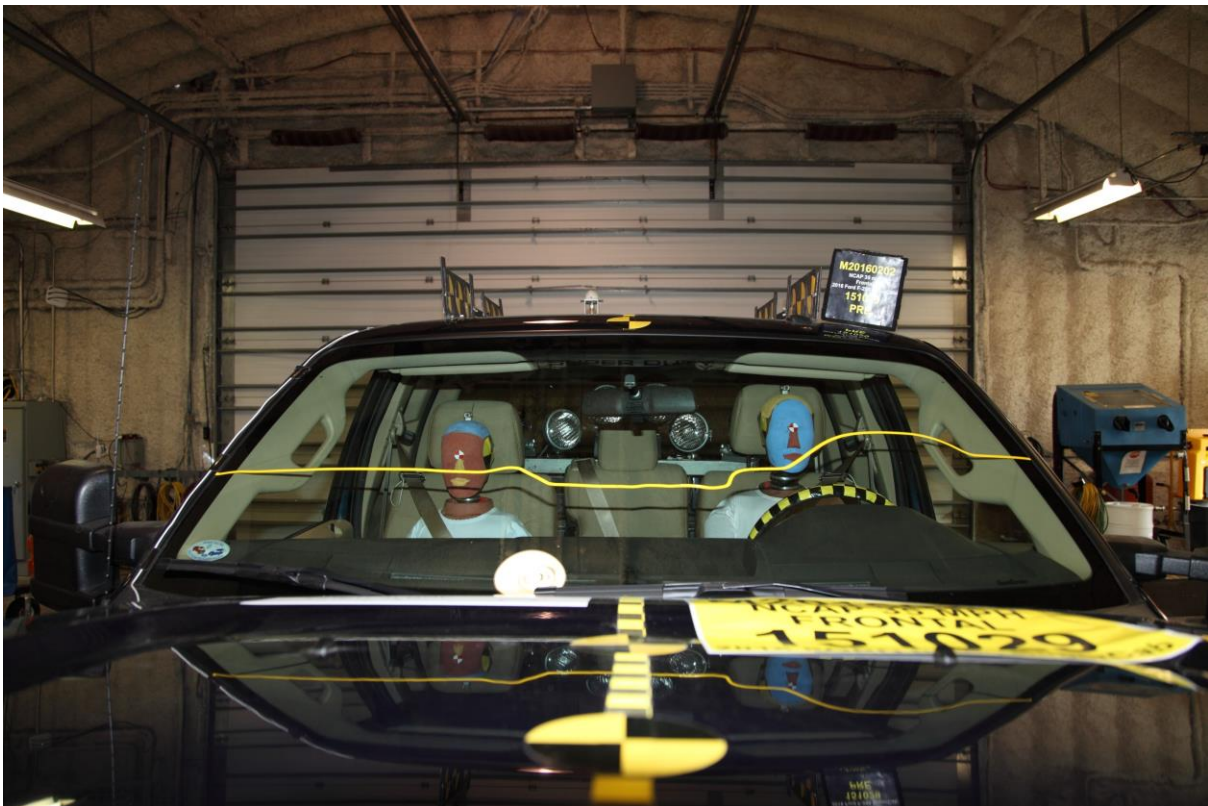
**015 Post-Test Right Front 3-4 View**



**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**



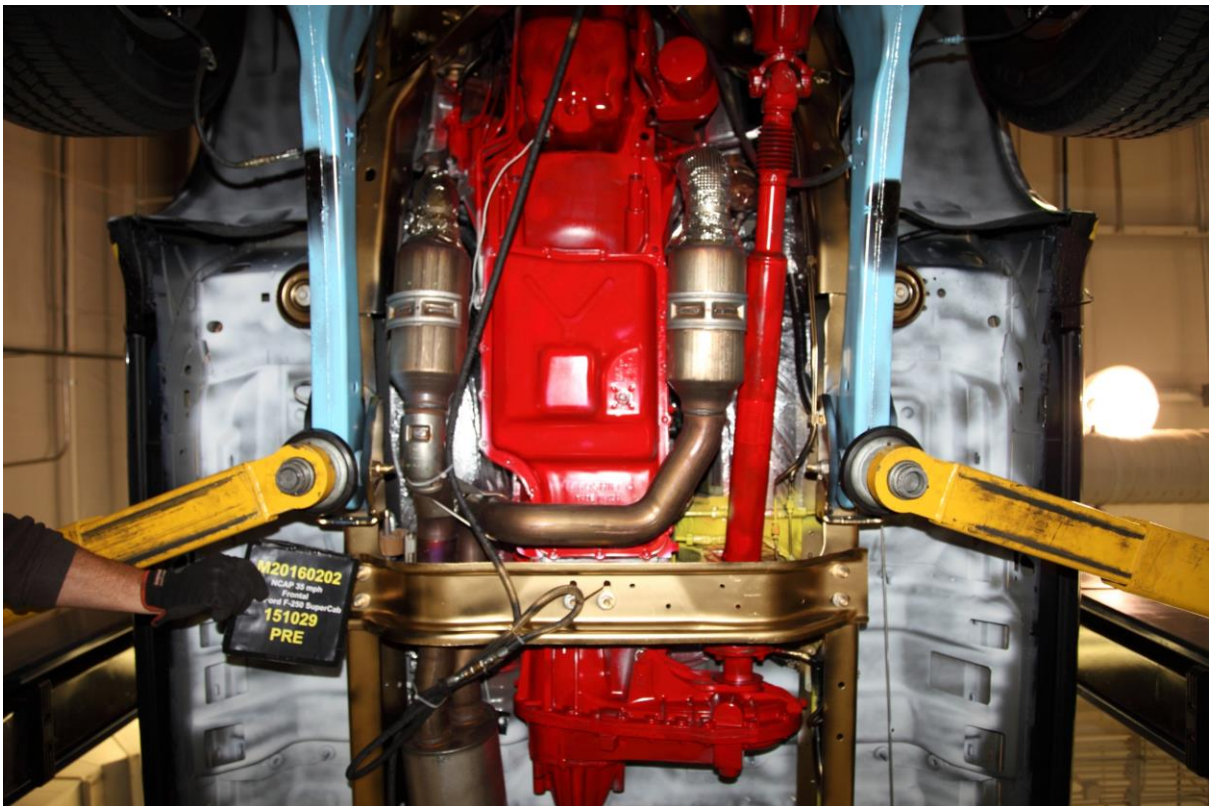
**023 Post-Test Fuel Filler Cap View**



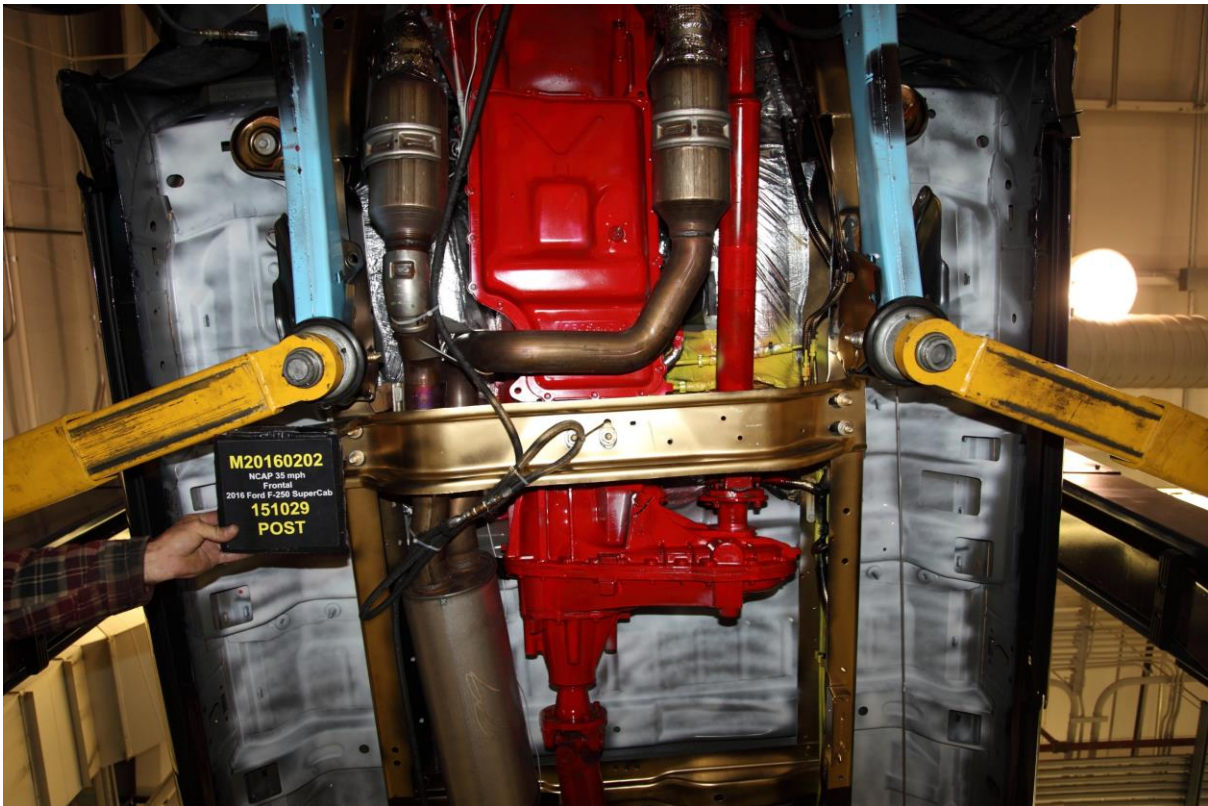
**024 Pre-Test Front Underbody View**



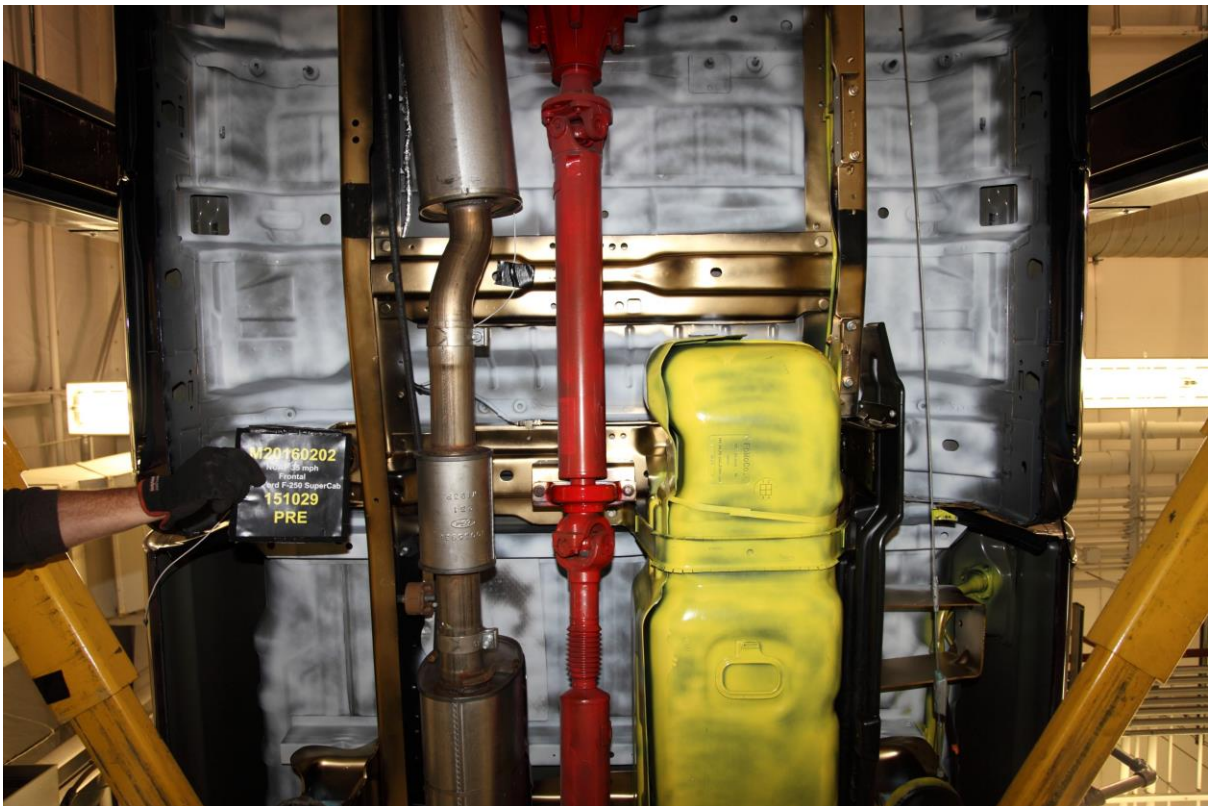
**025 Post-Test Front Underbody View**



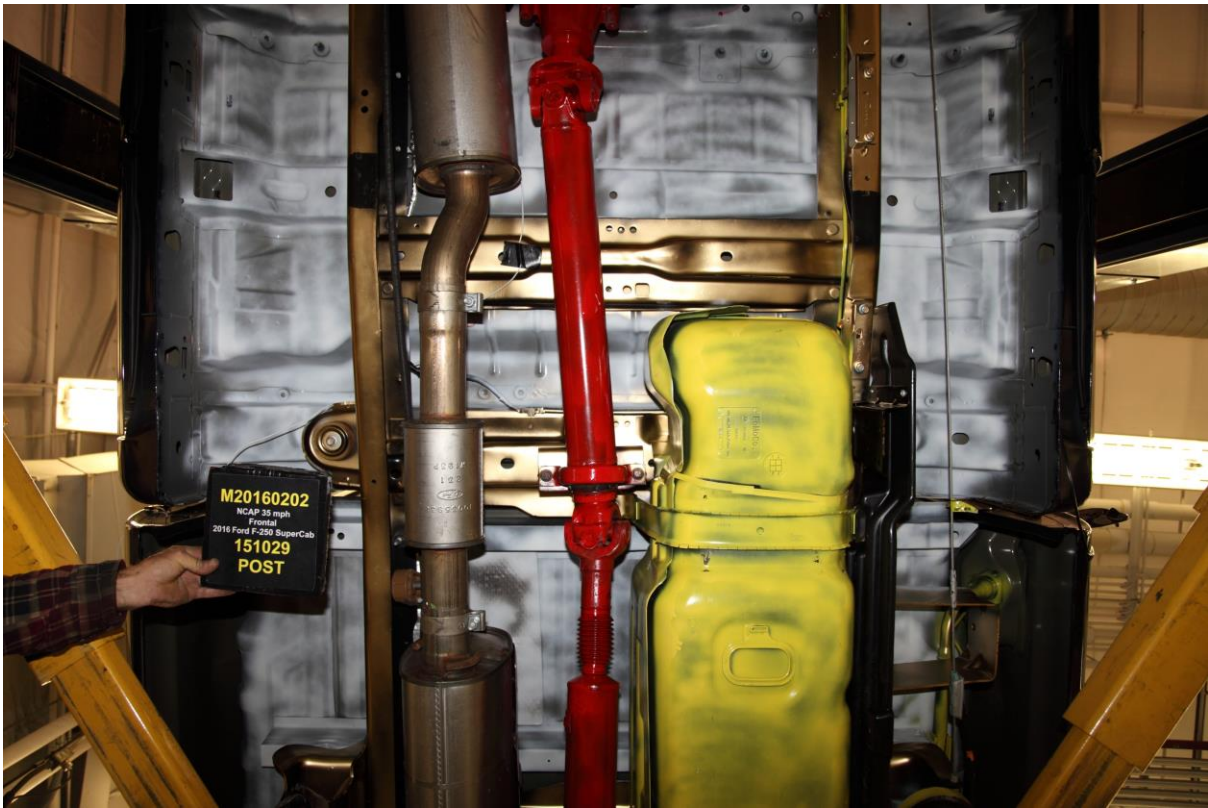
**025a Pre-Test Mid Front Underbody View**



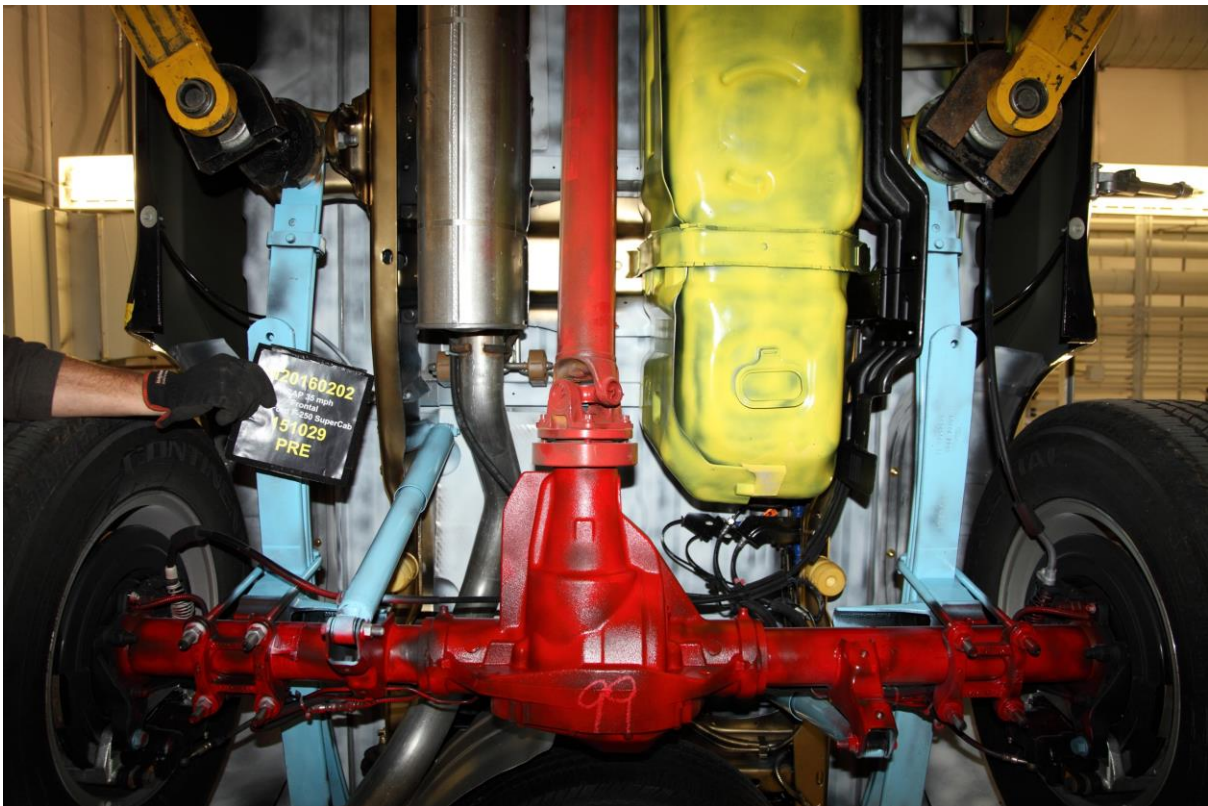
**025b Post-Test Mid Front Underbody View**



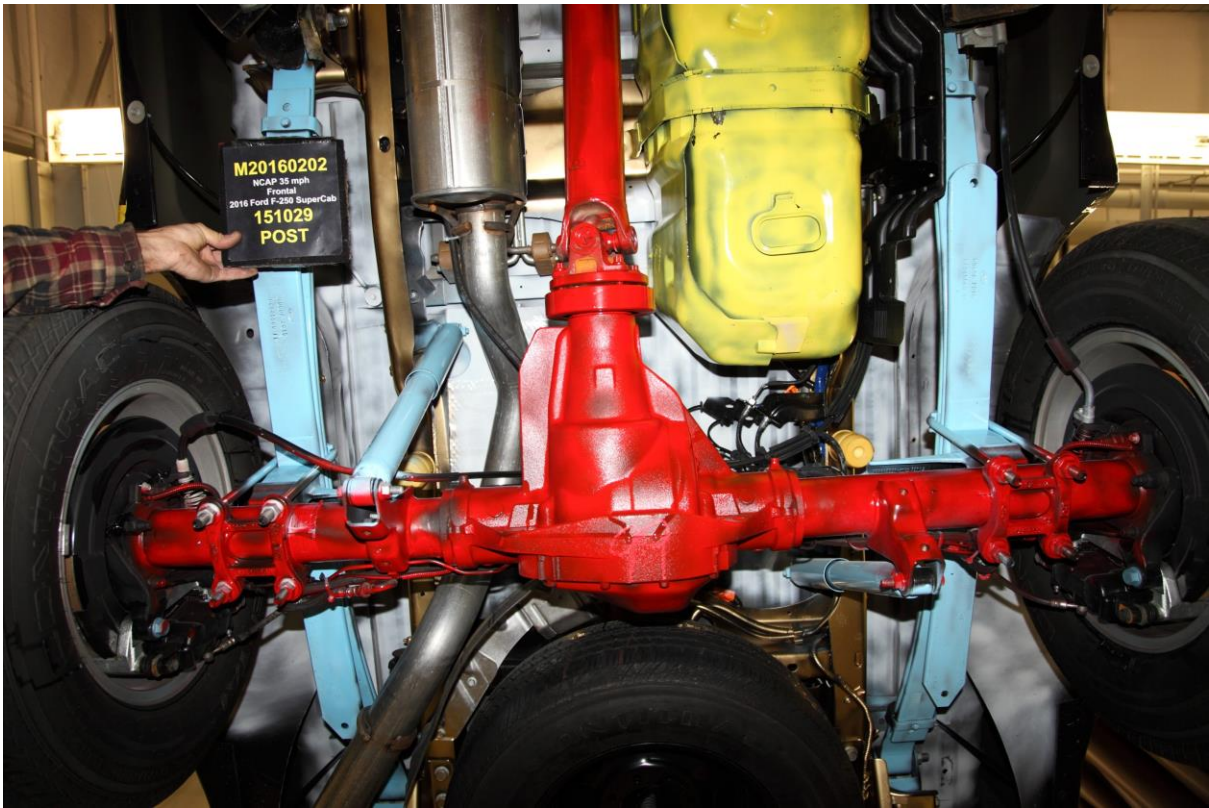
**025c Pre-Test Mid Underbody View**



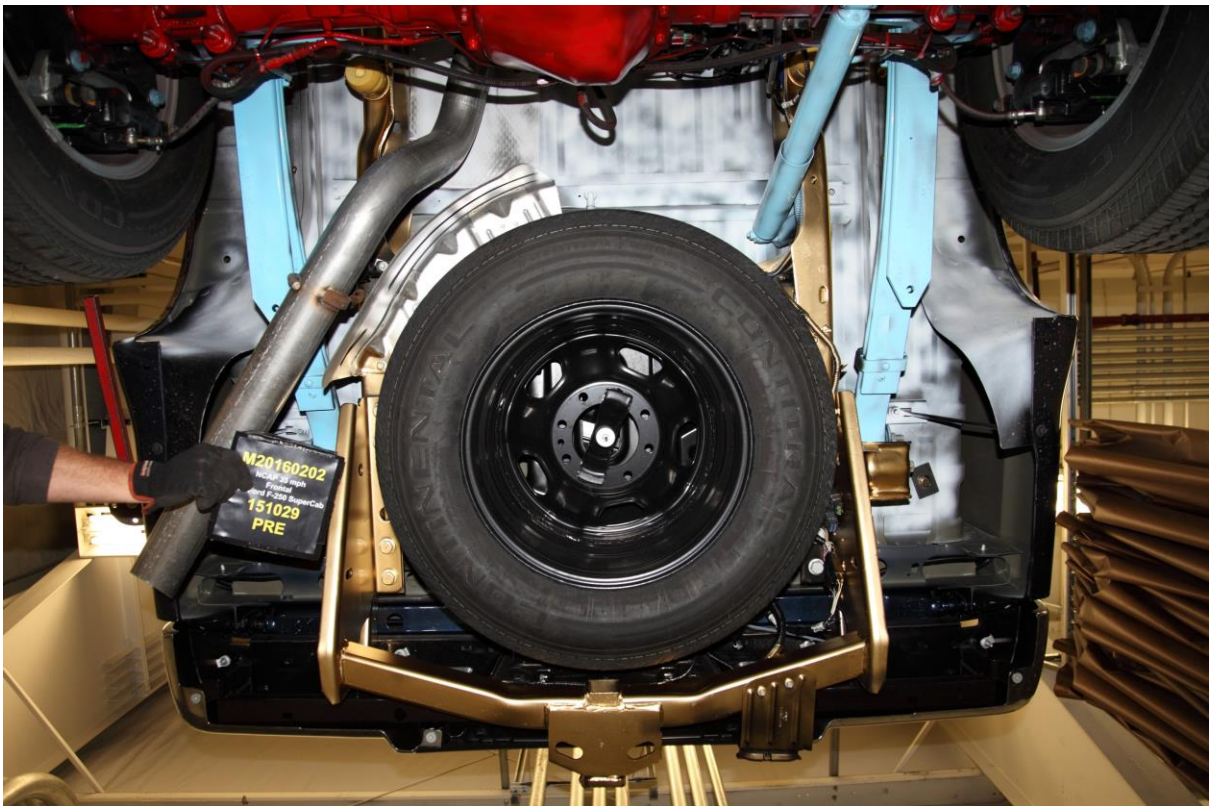
**025d Post-Test Mid Underbody View**



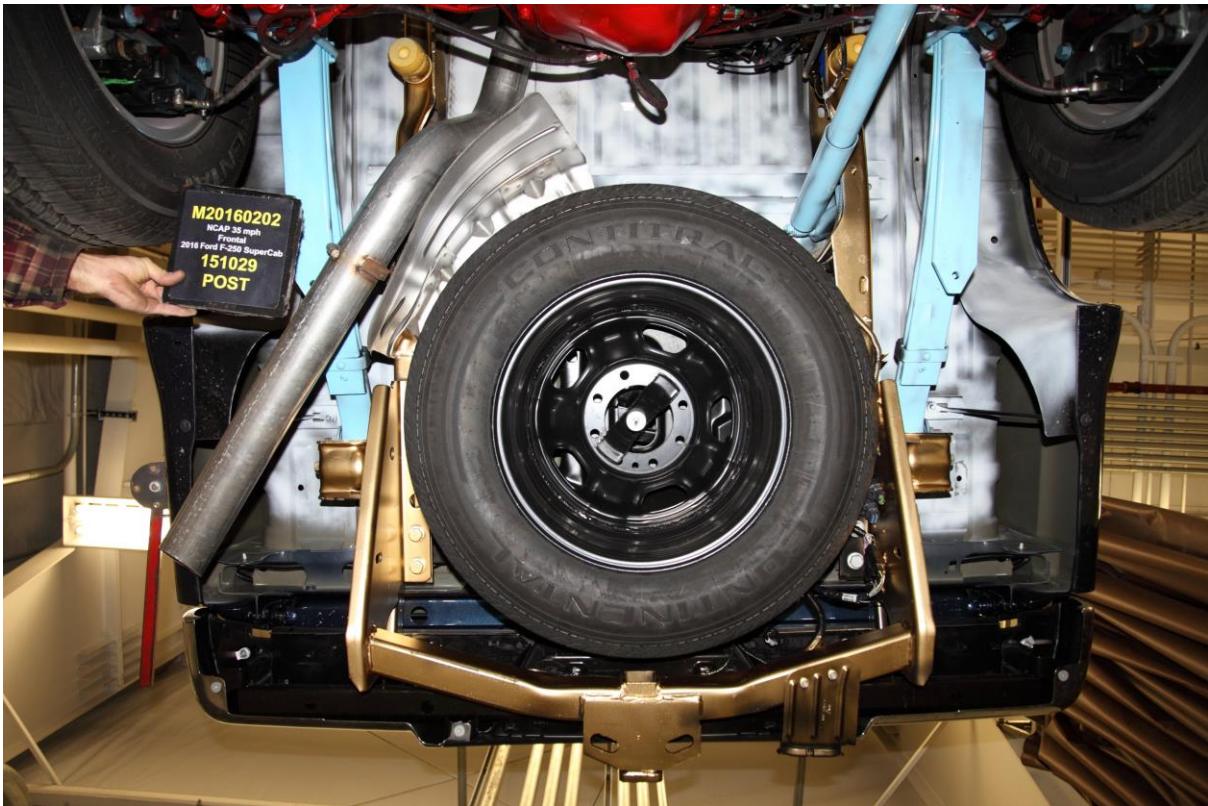
**025e Pre-Test Mid Rear Underbody View**



**025f Post-Test Mid Rear Underbody View**



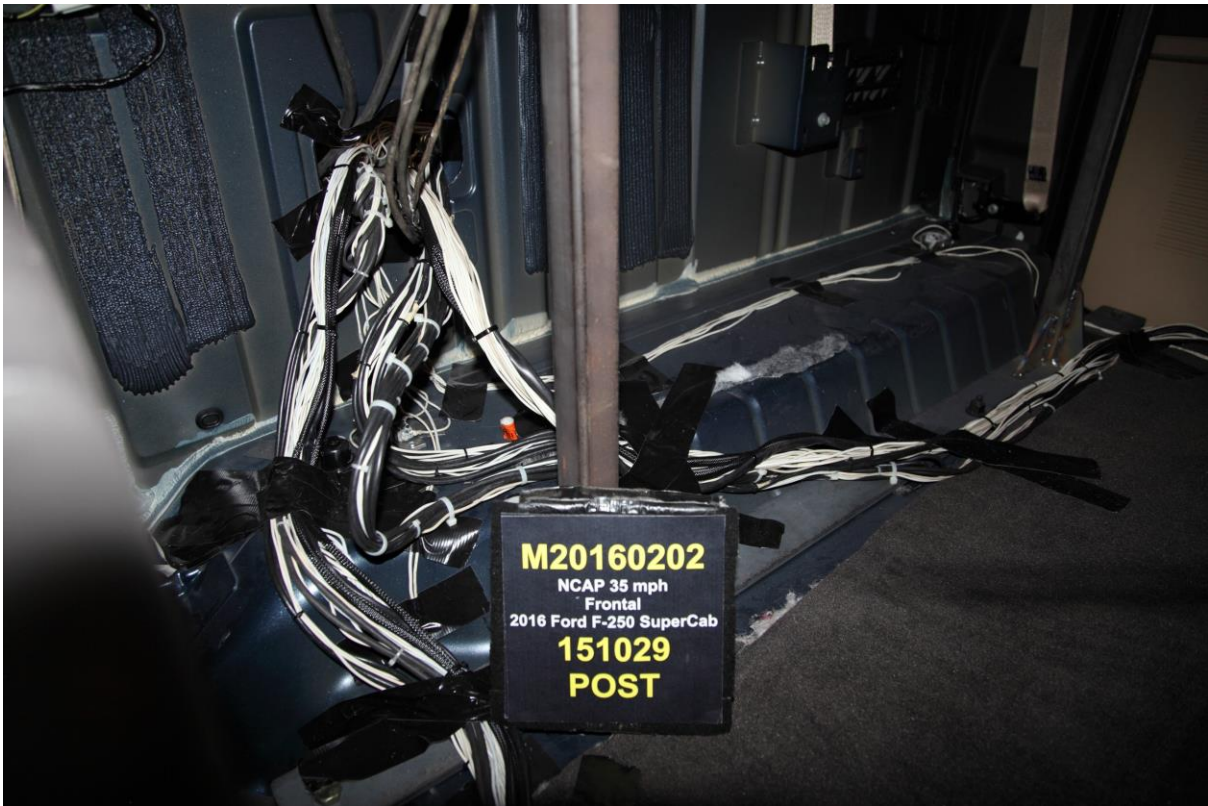
**026 Pre-Test Rear Underbody View**



**027 Post-Test Rear Underbody View**



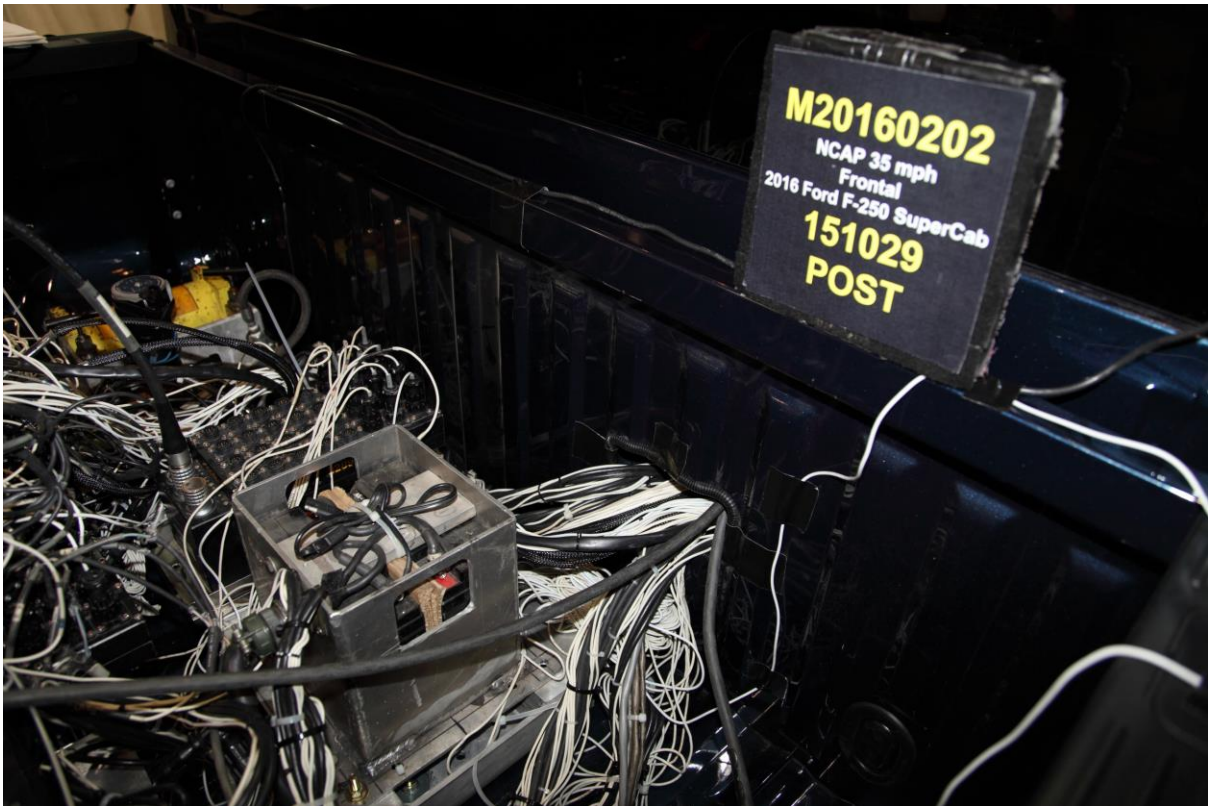
**028 Pre-Test Dummy Cable Routing**



**029 Post-Test Dummy Cable Routing**



**029a Pre-Test Dummy Cable Routing**



**029b 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**



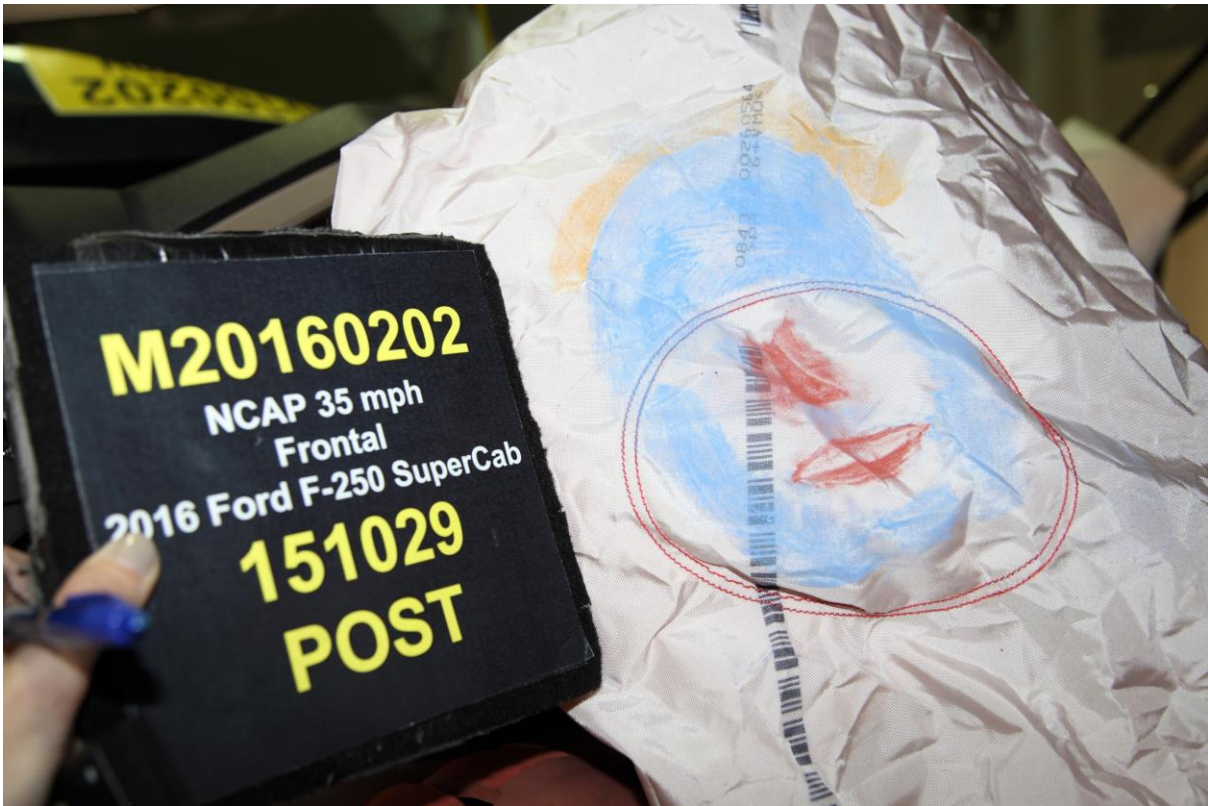
**044 Pre-Test Driver's Side Floorpan**



**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**



**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**



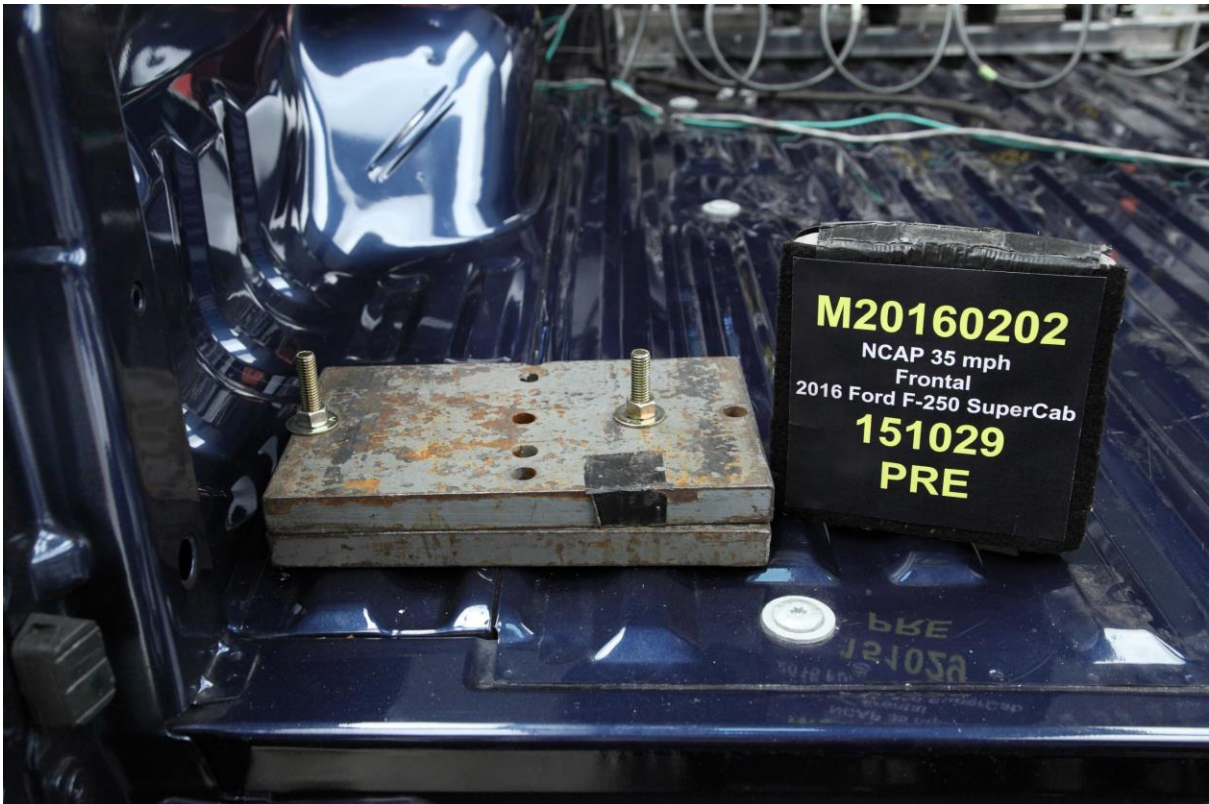
**067 Post-Test Passenger Dummy Face**



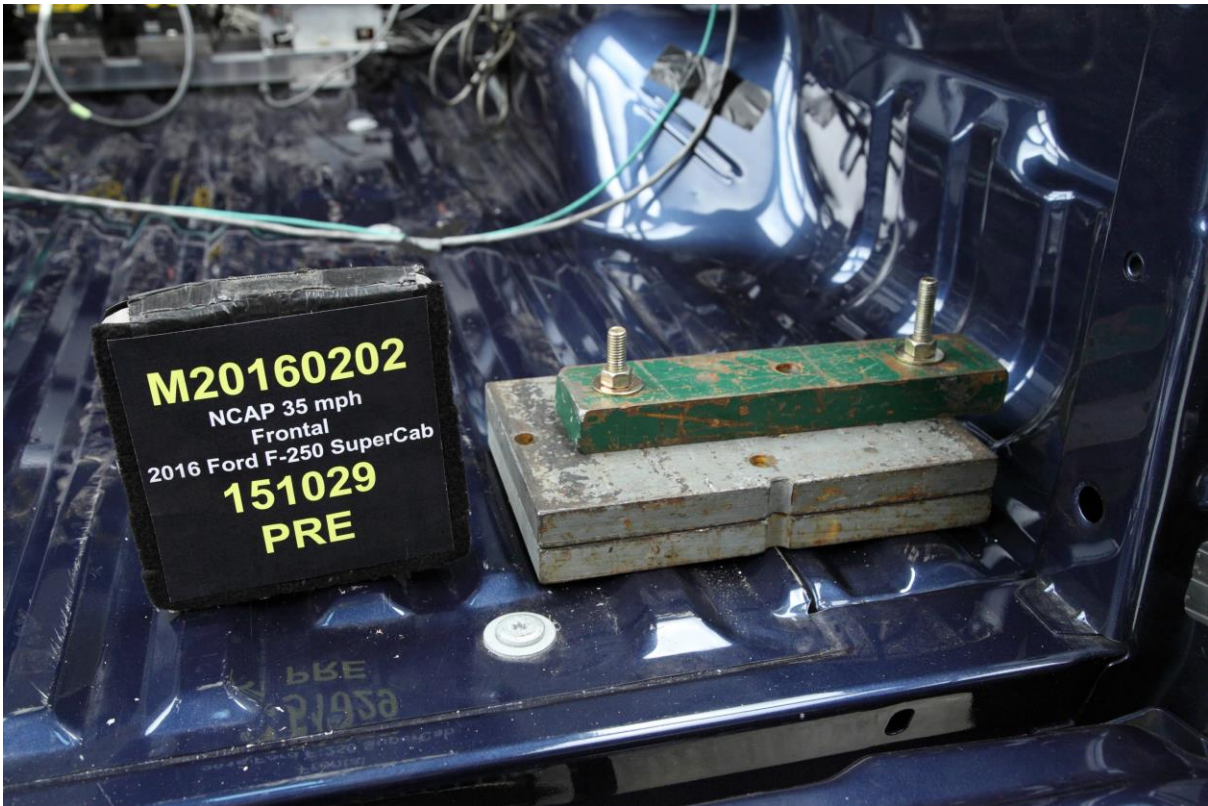
**068 Post-Test Passenger Dummy Contact With Airbag**



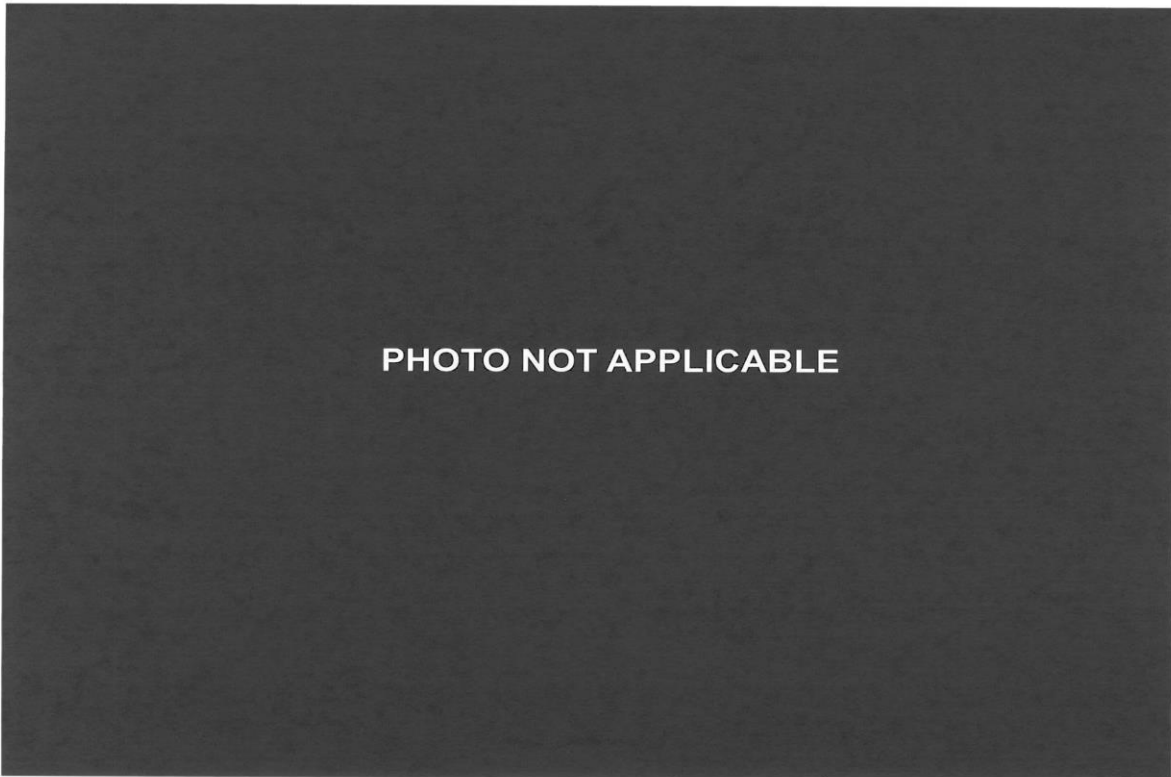
**069 Post Test Passenger Dummy Contact With Headrest**



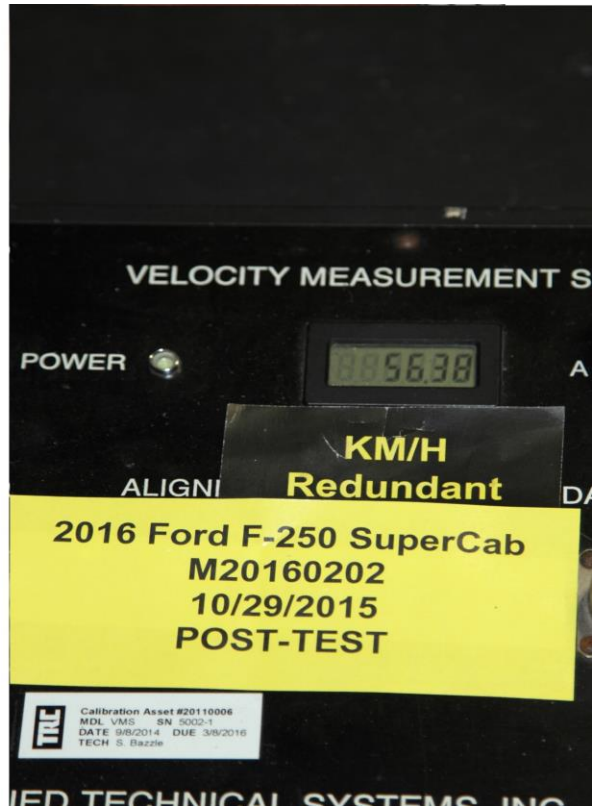
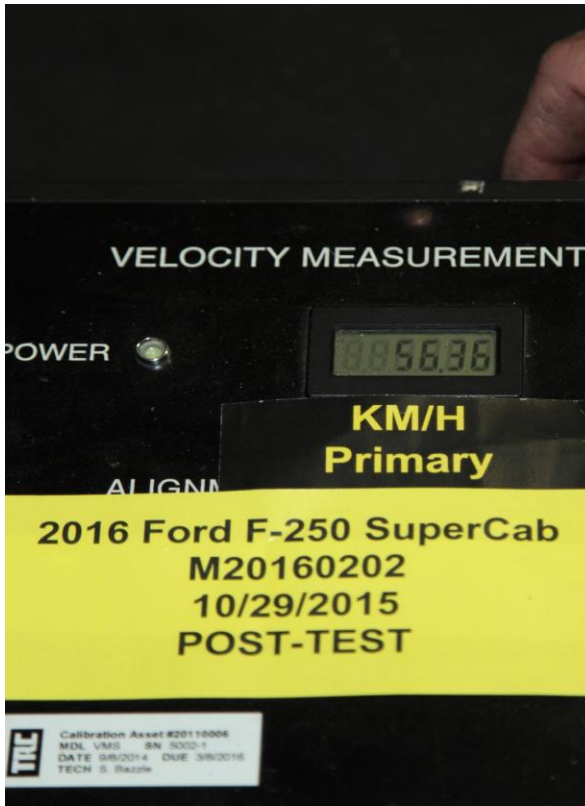
**070 Photograph of Ballast Installed in Vehicle**



**070a Photograph of Ballast Installed in Vehicle**



**071 Post-Test Stoddard Spillage Location View**



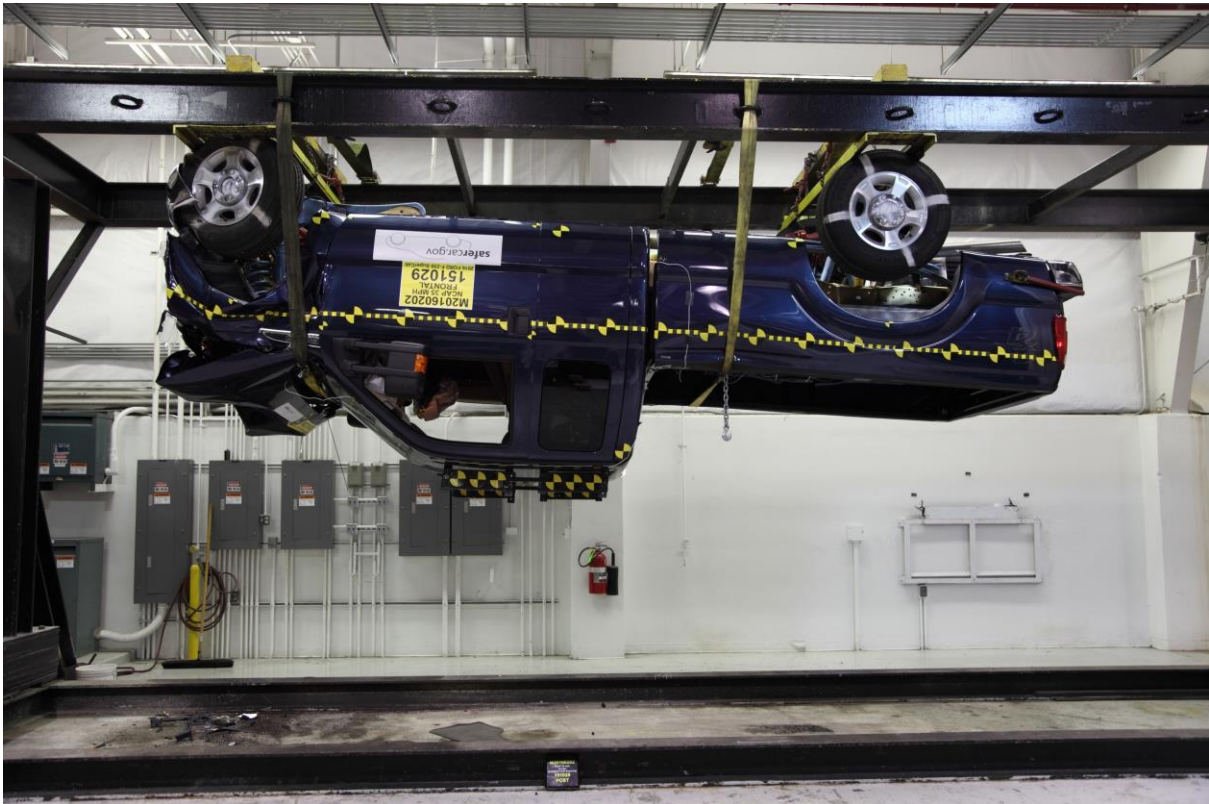
**072 Post-Test Speed Trap Readout**



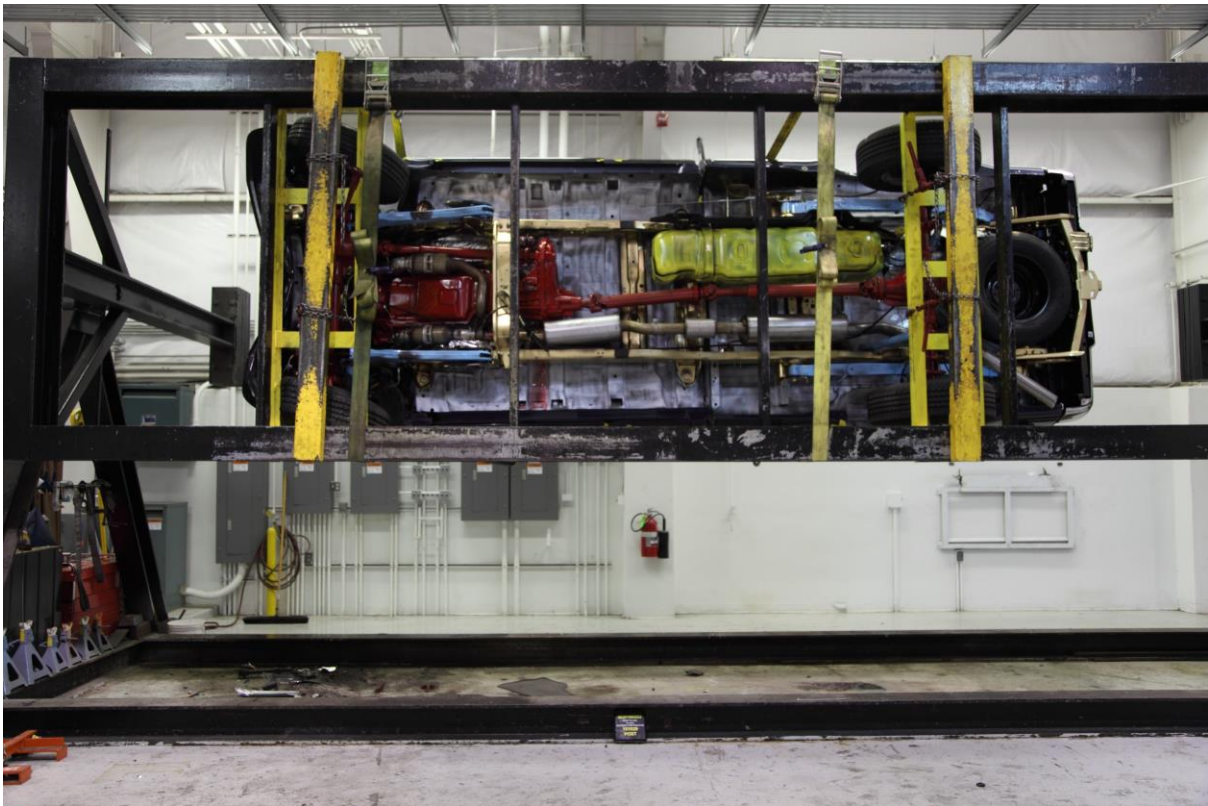
**073 Vehicle at 0° on Static Rollover Device**



**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 2016 Ford F-250 SuperCab Frontal Impact Event

VEHICLE DESCRIPTION		GE A68784		EPA DOT Fuel Economy and Environment																																													
<p><b>Go Further</b> ford.com</p>		<p><b>SUPER DUTY</b></p> <p>2016 F250 SRW 4X4 SUPERCAB XL1 165P WB 37V L5IDE 6.2L EFI V-8 ENGINE 6 SPEED AUTOMATIC TRANS</p>		<p>EXTERIOR: BLUE JEANS METALLIC INTERIOR: ADOBE CLOTH</p>		<p><b>FUEL ECONOMY RATINGS NOT REQUIRED ON THIS VEHICLE</b></p> <p><b>fueleconomygov</b> Calculate personalized estimates and compare vehicles.</p>																																											
<p><b>STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE</b></p> <table border="0"> <tr> <td><b>EXTERIOR</b></td> <td><b>INTERIOR</b></td> <td><b>FUNCTIONAL</b></td> <td><b>SAFETY/SECURITY</b></td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>GRILLE - 3-BAR CHROME</li> <li>LOCKING REMOVABLE TAILGATE</li> <li>W/LEFT ASST -NA W/ROCK DLT</li> <li>PICKUP BOX, TIE DOWN HOOKS</li> <li>NA W/ROCK DLT</li> <li>REAR PRIVACY GLASS</li> <li>SPARE TIRE AND WHEEL LOCK</li> <li>NA W/ROCK DLT</li> <li>TOW HOOKS</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>TOUCH UP/DOWN DR/PASS WIN</li> <li>60/40 FOLD-UP REAR BENCH SEAT</li> <li>AIR COND, MANUAL FRONT</li> <li>AM/FM SINGLE COMP9 PLAYER</li> <li>AUXILIARY AUDIO INPUT JACK</li> <li>COLOR COORDINATED CARPET AND FLOOR MATS</li> <li>CRUISE CONTROL</li> <li>DAY/NIGHT REARVIEW MIRROR</li> <li>SYNC</li> <li>TILT/TELESCOPE STR COLUMN</li> <li>VINYL SUN VISORS</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>FIXED INTERVAL WIPERS</li> <li>HILL START ASSIST</li> <li>MANUAL LOCKING HUBS</li> <li>MANUAL TELESCOPING TT MIRROR, POWERHEATED GLASS AND SIGNALS</li> <li>MONO BEAM COIL SPRING FR1 SUSPENSION W/STAB BAR</li> <li>POWER WINDOWS/LOCKS</li> <li>TRAILER BRAKE CONTROLLER</li> <li>TRAILER SWAY CONTROL</li> <li>TRAILER TOW PKG</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>4-WHEEL ABS</li> <li>AIRBAGS - SAFETY CANOPY</li> <li>DRIVER/PASSENGER AIR BAGS</li> <li>MYKEY</li> <li>REMOTE KEYLESS ENTRY</li> <li>SECURILOCK PASS ANTI THEFT</li> <li>SOS POST CRASH ALERT SYS</li> </ul> </td> </tr> </table>							<b>EXTERIOR</b>	<b>INTERIOR</b>	<b>FUNCTIONAL</b>	<b>SAFETY/SECURITY</b>	<ul style="list-style-type: none"> <li>GRILLE - 3-BAR CHROME</li> <li>LOCKING REMOVABLE TAILGATE</li> <li>W/LEFT ASST -NA W/ROCK DLT</li> <li>PICKUP BOX, TIE DOWN HOOKS</li> <li>NA W/ROCK DLT</li> <li>REAR PRIVACY GLASS</li> <li>SPARE TIRE AND WHEEL LOCK</li> <li>NA W/ROCK DLT</li> <li>TOW HOOKS</li> </ul>	<ul style="list-style-type: none"> <li>TOUCH UP/DOWN DR/PASS WIN</li> <li>60/40 FOLD-UP REAR BENCH SEAT</li> <li>AIR COND, MANUAL FRONT</li> <li>AM/FM SINGLE COMP9 PLAYER</li> <li>AUXILIARY AUDIO INPUT JACK</li> <li>COLOR COORDINATED CARPET AND FLOOR MATS</li> <li>CRUISE CONTROL</li> <li>DAY/NIGHT REARVIEW MIRROR</li> <li>SYNC</li> <li>TILT/TELESCOPE STR COLUMN</li> <li>VINYL SUN VISORS</li> </ul>	<ul style="list-style-type: none"> <li>FIXED INTERVAL WIPERS</li> <li>HILL START ASSIST</li> <li>MANUAL LOCKING HUBS</li> <li>MANUAL TELESCOPING TT MIRROR, POWERHEATED GLASS AND SIGNALS</li> <li>MONO BEAM COIL SPRING FR1 SUSPENSION W/STAB BAR</li> <li>POWER WINDOWS/LOCKS</li> <li>TRAILER BRAKE CONTROLLER</li> <li>TRAILER SWAY CONTROL</li> <li>TRAILER TOW PKG</li> </ul>	<ul style="list-style-type: none"> <li>4-WHEEL ABS</li> <li>AIRBAGS - SAFETY CANOPY</li> <li>DRIVER/PASSENGER AIR BAGS</li> <li>MYKEY</li> <li>REMOTE KEYLESS ENTRY</li> <li>SECURILOCK PASS ANTI THEFT</li> <li>SOS POST CRASH ALERT SYS</li> </ul>																																			
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<p>SOLD TO: 13V 529 Ferrario Ford-Lincoln 2472 Corning Road Elmira NY 14903</p>		<p>PAID ONE: CA3M 13V 529</p>		<p><b>TOTAL MSRP \$43,445.00</b></p>																																													
<p>SHIP TO (IF OTHER THAN SOLD TO)</p>		<p>FINAL ASSEMBLY PLANT: KENTUCKY</p>		<p>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.</p>																																													
<p>SHIP THROUGH: CONVOY</p>		<p>METHOD OF TRANSP: ITEM #: 13-S100 Q/T 2</p>		<p>PH251 N RB 2X 615 000728 08 25 15</p>																																													

079 Monroney Label Photograph

**APPENDIX B**  
**VEHICLE AND DUMMY RESPONSE DATA PLOTS**

## TABLE OF DATA PLOTS

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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](http://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

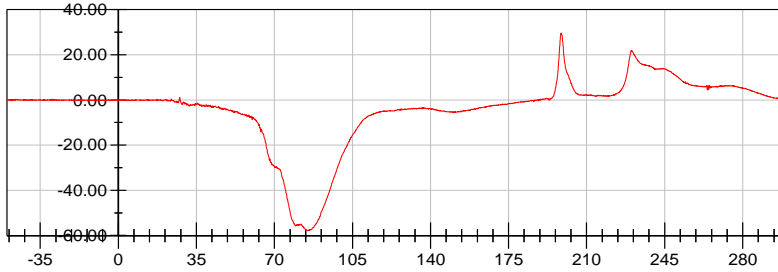
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

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



**<Max>**

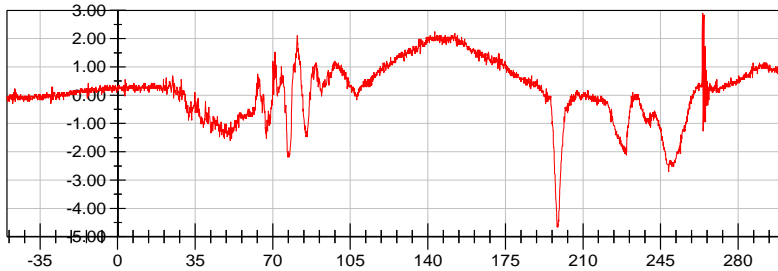
29.69 g at 198.56 ms

**<Min>**

-57.85 g at 84.96 ms

CFC\_1000

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



**<Max>**

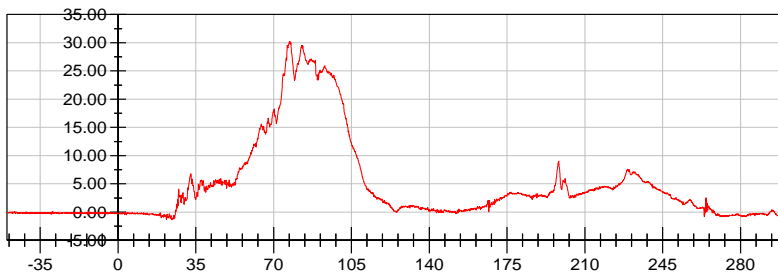
2.90 g at 264.00 ms

**<Min>**

-4.66 g at 198.32 ms

CFC\_1000

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



**<Max>**

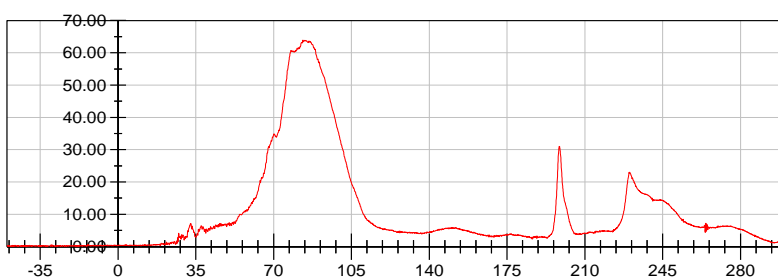
30.26 g at 77.28 ms

**<Min>**

-1.39 g at 24.32 ms

CFC\_1000

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



**<Max>**

63.94 g at 83.20 ms

**<Min>**

0.05 g at -43.84 ms

CFC\_1000



# NHTSA

Test Lab: CTF

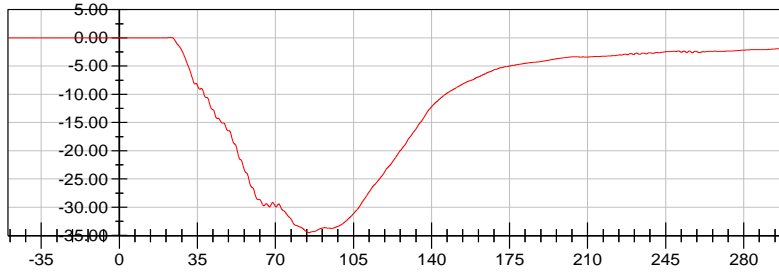
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

Driver Chest X Deflection vs. Time (mm) vs. Time [ms]



**<Max>**

0.04 mm at 23.20 ms

**<Min>**

-34.50 mm at 85.12 ms

CFC\_600



# NHTSA

Test Lab: CTF

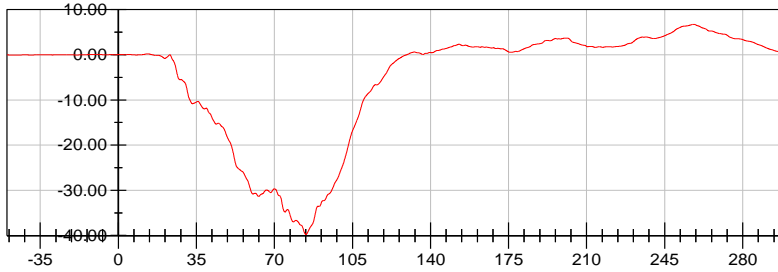
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

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



**<Max>**

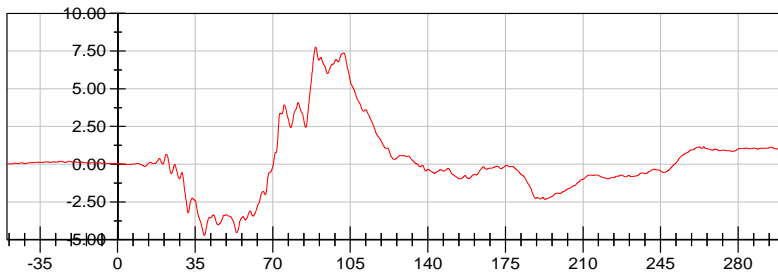
6.75 g at 257.92 ms

**<Min>**

-39.76 g at 84.16 ms

CFC\_180

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



**<Max>**

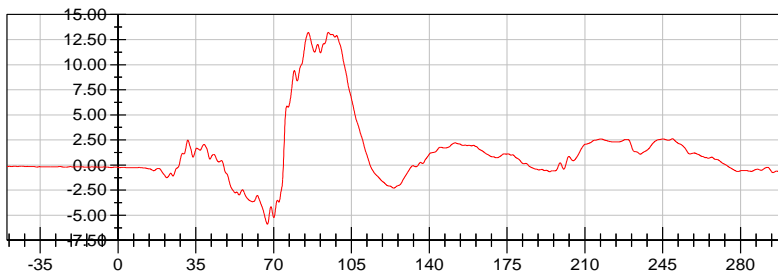
7.77 g at 89.36 ms

**<Min>**

-4.71 g at 39.12 ms

CFC\_180

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



**<Max>**

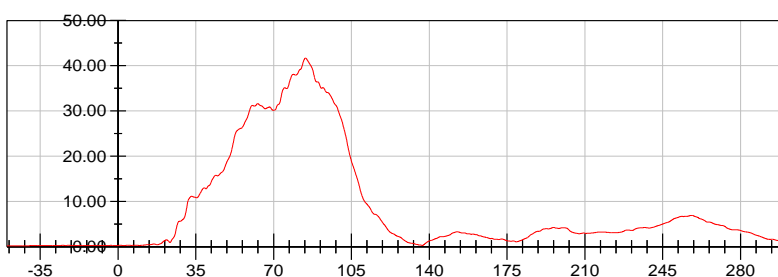
13.23 g at 94.64 ms

**<Min>**

-5.90 g at 67.20 ms

CFC\_180

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



**<Max>**

41.69 g at 84.32 ms

**<Min>**

0.14 g at -49.20 ms

CFC\_180



# NHTSA

Test Lab: CTF

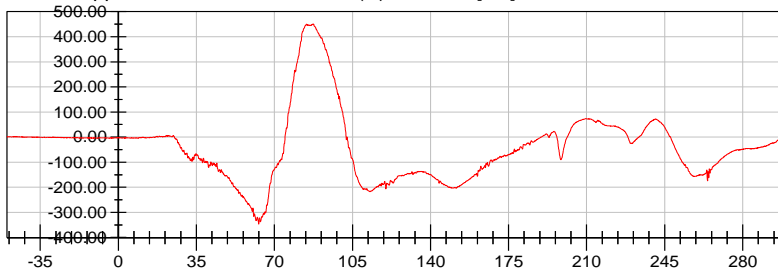
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

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



**<Max>**

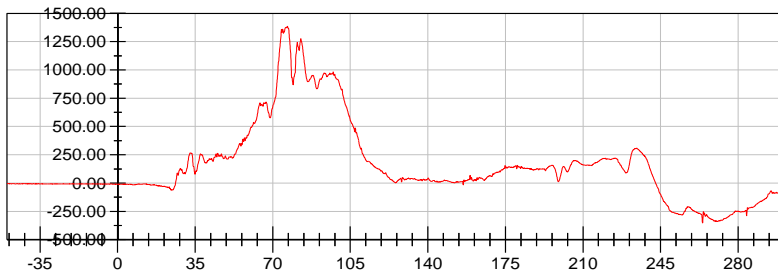
450.58 N at 87.52 ms

**<Min>**

-346.63 N at 62.96 ms

CFC\_1000

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



**<Max>**

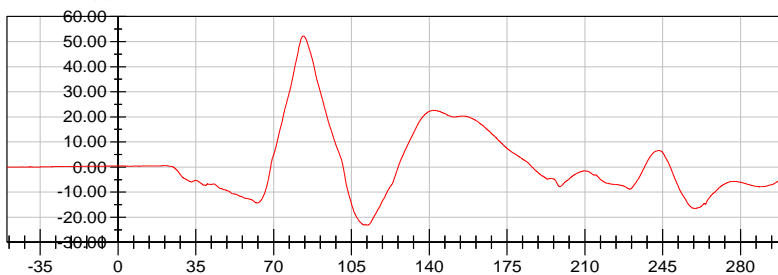
1,385.26 N at 76.56 ms

**<Min>**

-351.48 N at 263.92 ms

CFC\_1000

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



**<Max>**

52.23 Nm at 83.28 ms

**<Min>**

-23.13 Nm at 112.16 ms

CFC\_600





# 2016 Ford F-250 SuperCab NCAP 35 mph Frontal Impact

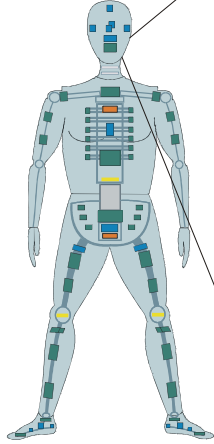
Date: 10/29/2015  
Time: 16:19

## Neck Injury Predictor (NIJ)

Customer: NHTSA  
Test Number: M20160202

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

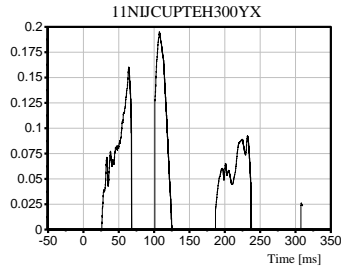
TRC Inc. Test Lab: CTF  
Test Number: 151029



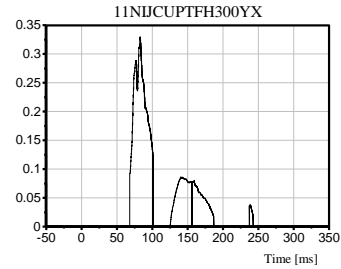
Dummy: HIII 50th Male  
Seating Position:

Driver

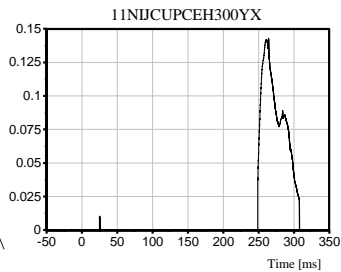
NIJ Source Code: (Fz/Fzc)+(My/Myc)



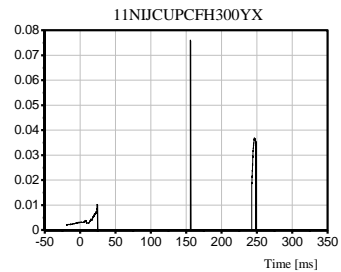
Max [NTE] 0.1950 at 107.36 ms



Max [NTF] 0.3297 at 82.72 ms



Max [NCE] 0.1432 at 263.92 ms



Max [NCF] 0.0761 at 155.92 ms

# NHTSA

Test Lab: CTF

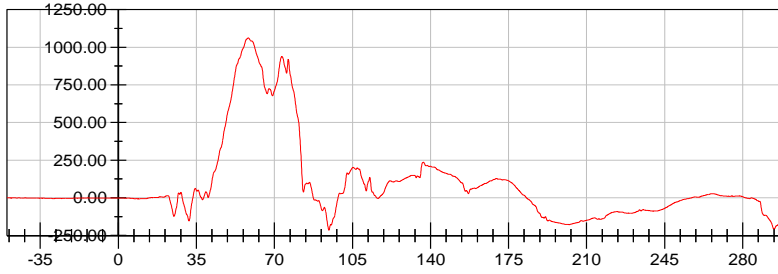
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

Driver Left Femur Force vs. Time (N) vs. Time [ms]



**<Max>**

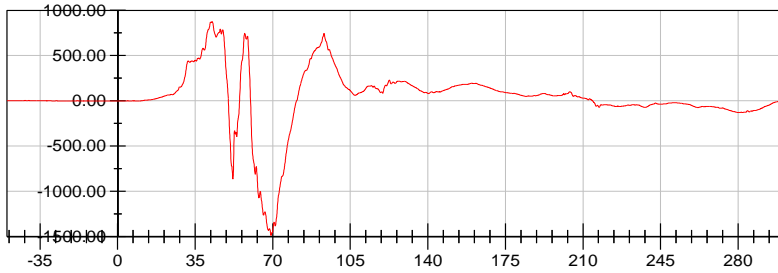
1,063.36 N at 58.32 ms

**<Min>**

-214.62 N at 94.48 ms

CFC\_600

Driver Right Femur Force vs. Time (N) vs. Time [ms]



**<Max>**

876.34 N at 42.72 ms

**<Min>**

-1,487.25 N at 69.20 ms

CFC\_600



# NHTSA

Test Lab: CTF

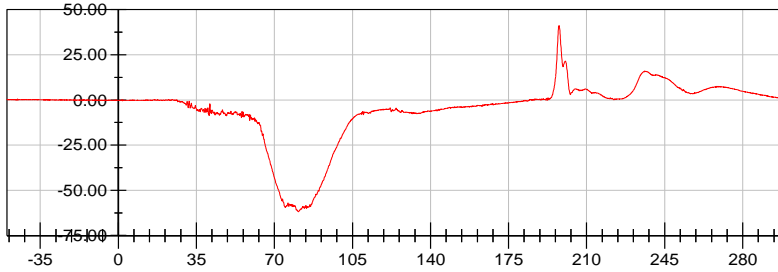
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

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



**<Max>**

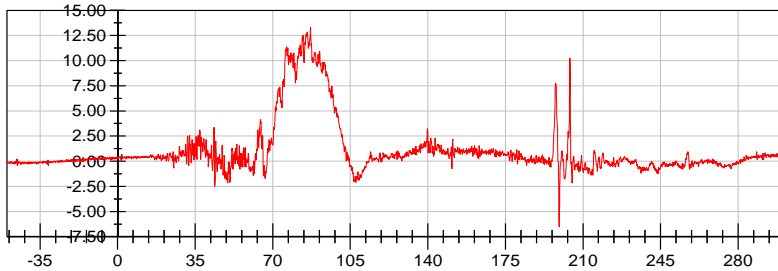
41.20 g at 197.68 ms

**<Min>**

-61.90 g at 80.72 ms

CFC\_1000

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



**<Max>**

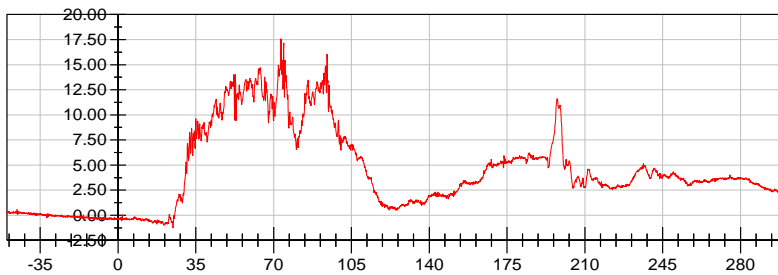
13.31 g at 87.04 ms

**<Min>**

-6.52 g at 199.20 ms

CFC\_1000

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



**<Max>**

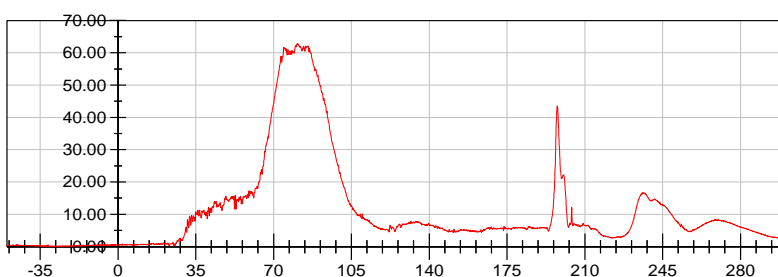
17.59 g at 73.36 ms

**<Min>**

-1.25 g at 24.72 ms

CFC\_1000

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



**<Max>**

62.90 g at 80.72 ms

**<Min>**

0.03 g at -31.36 ms

CFC\_1000



# NHTSA

Test Lab: CTF

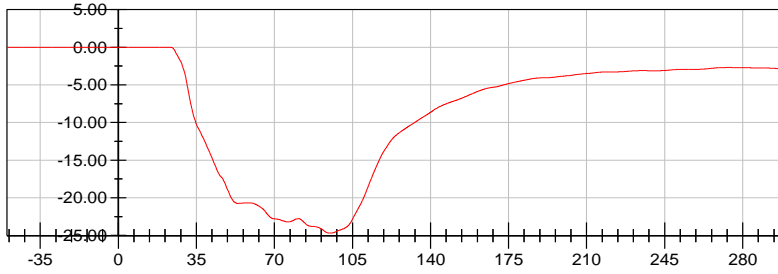
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

Passenger Chest X Deflection vs. Time (mm) vs. Time [ms]



**<Max>**

0.01 mm at -40.08 ms

**<Min>**

-24.68 mm at 94.64 ms

CFC\_600



# NHTSA

Test Lab: CTF

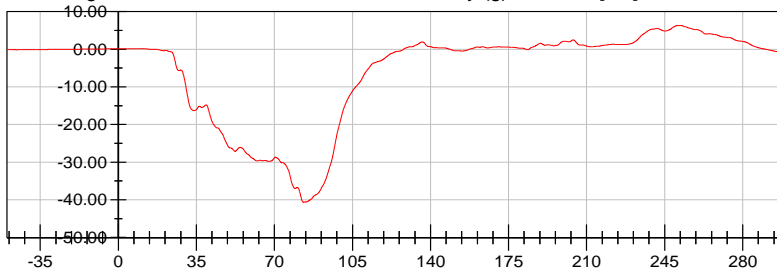
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

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



**<Max>**

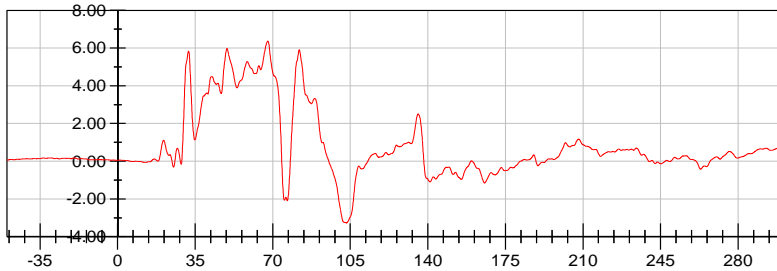
6.34 g at 252.08 ms

**<Min>**

-40.65 g at 83.04 ms

CFC\_180

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



**<Max>**

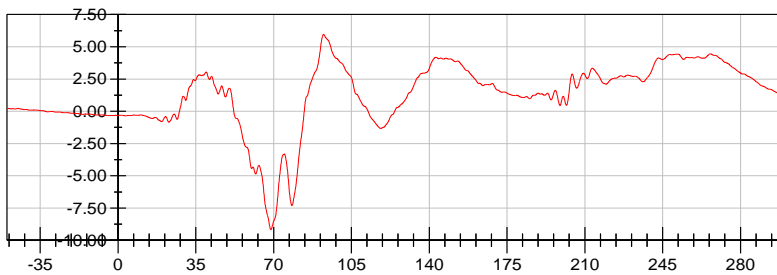
6.37 g at 67.76 ms

**<Min>**

-3.28 g at 103.28 ms

CFC\_180

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



**<Max>**

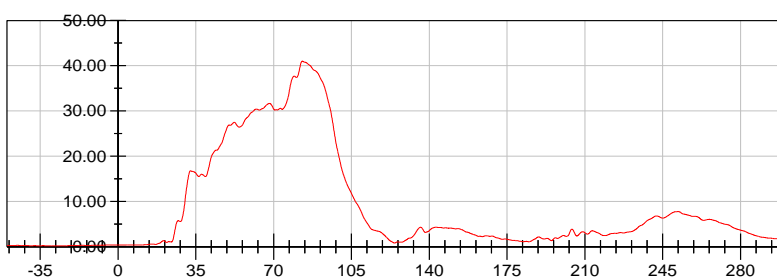
5.95 g at 92.48 ms

**<Min>**

-9.16 g at 68.80 ms

CFC\_180

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



**<Max>**

41.00 g at 82.96 ms

**<Min>**

0.14 g at -26.32 ms

CFC\_180



# NHTSA

Test Lab: CTF

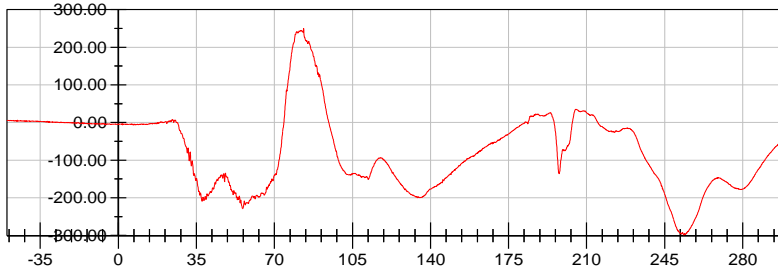
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

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



**<Max>**

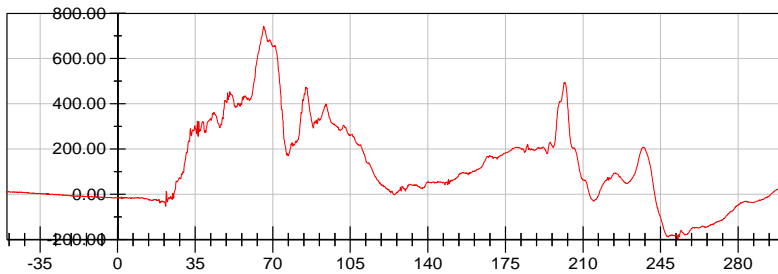
250.27 N at 83.12 ms

**<Min>**

-298.70 N at 253.60 ms

CFC\_1000

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



**<Max>**

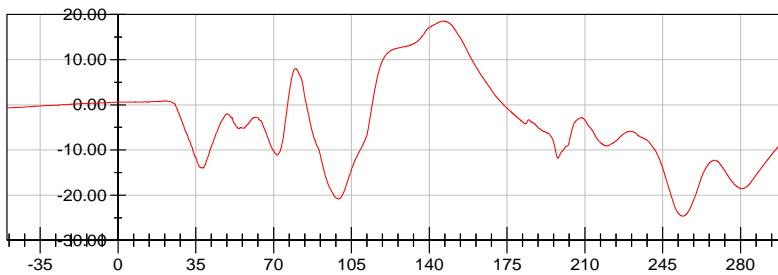
742.71 N at 65.92 ms

**<Min>**

-196.63 N at 252.80 ms

CFC\_1000

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



**<Max>**

18.58 Nm at 146.64 ms

**<Min>**

-24.67 Nm at 254.00 ms

CFC\_600





# 2016 Ford F-250 SuperCab NCAP 35 mph Frontal Impact

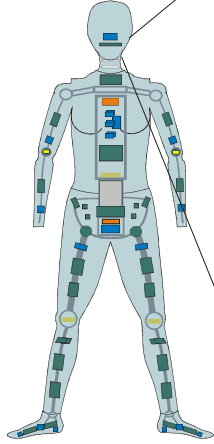
Date: 10/29/2015  
Time: 16:19

## Neck Injury Predictor (NIJ)

Customer: NHTSA  
Test Number: M20160202

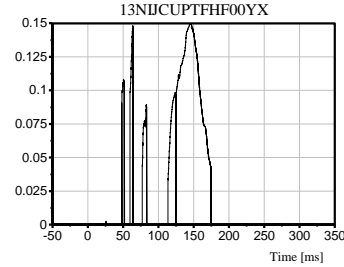
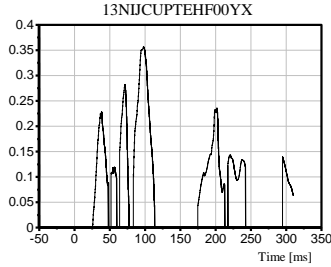
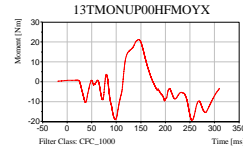
Test Orientation = Frontal  
Fzc(Tension) = 4287  
Fzc(Compression) = 3880  
Myc(Extension) = 67  
Myc(Flexion) = 155

TRC Inc. Test Lab: CTF  
Test Number: 151029



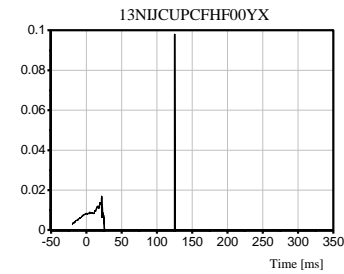
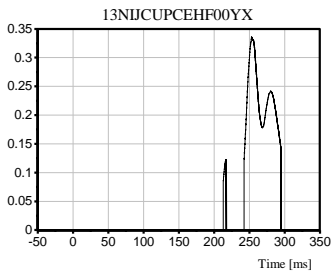
Dummy: HIII 5th Female  
Seating Position:  
Right Front Passenger

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



Max [NTE] 0.3570 at 97.76 ms

Max [NTF] 0.1498 at 145.76 ms



Max [NCE] 0.3359 at 252.96 ms

Max [NCF] 0.0981 at 125.12 ms

# NHTSA

Test Lab: CTF

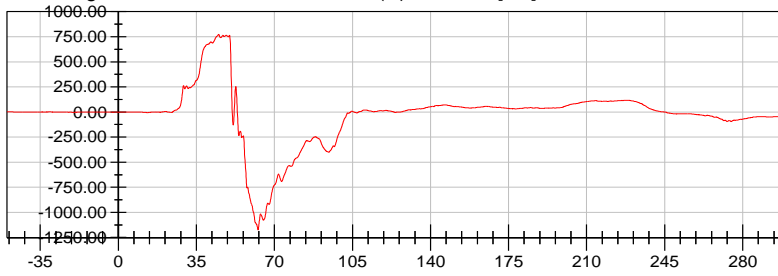
Test Number: 151029 (M20160202)

Test Date: 10/29/2015

Position #1 Hybrid III Mid-Sized Adult Male Dummy (37)

Position #2 Hybrid III Small Adult Female (426)

Passenger Left Femur Force vs. Time (N) vs. Time [ms]



**<Max>**

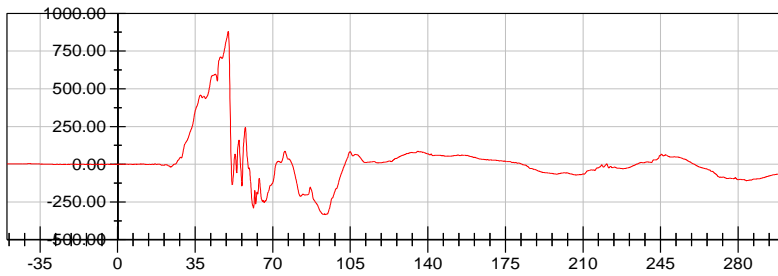
773.59 N at 44.96 ms

**<Min>**

-1,174.68 N at 62.64 ms

CFC\_600

Passenger Right Femur Force vs. Time (N) vs. Time [ms]



**<Max>**

879.73 N at 49.92 ms

**<Min>**

-333.66 N at 93.84 ms

CFC\_600



**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. 29**

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	885	Yes
B	Shoulder Pivot Height	505.5 - 520.7	519	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	297	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	599	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	225	Yes
P	Foot Length	251.5 - 266.7	264	Yes
V	Shoulder Breadth	421.6 - 436.9	429	Yes
W	Foot Breadth	91.4 - 106.7	97	Yes
Y	Chest Circumference	970.3 - 1000.8	989	Yes
Z	Waist Circumference	835.7 - 866.1	865	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician



Approved




Revised 8/10/12

# Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 29-1

Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	254.8 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-3.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**

**Comments:**

Technician

  
\_\_\_\_\_

Approved

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

09.25.2015 09:48:20 605

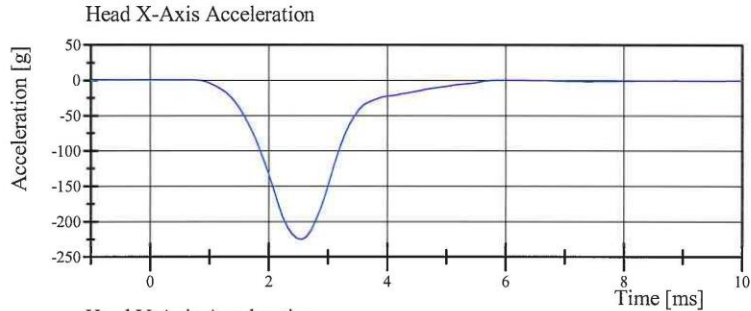


# Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 29-1

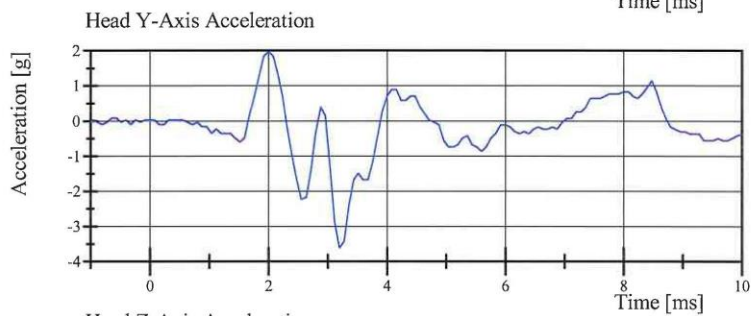
Test Date: 9/25/2015



Filter Class: CFC\_1000

Max: 0.2 g at 6.2 ms

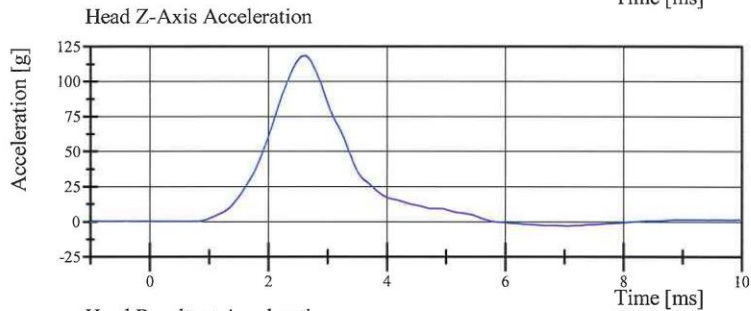
Min: -225.8 g at 2.6 ms



Filter Class: CFC\_1000

Max: 1.9 g at 2.0 ms

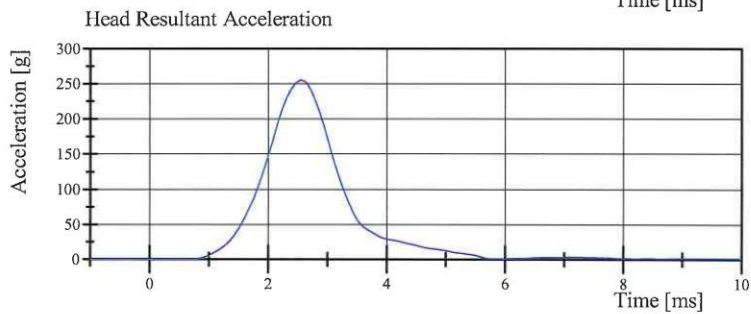
Min: -3.6 g at 3.2 ms



Filter Class: CFC\_1000

Max: 118.2 g at 2.6 ms

Min: -3.0 g at 7.0 ms



Filter Class: CFC\_1000

Max: 254.8 g at 2.6 ms

Min: 0.0 g at -1.0 ms

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

09.25.2015 09:48:30 605



# Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 29-1

Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.927 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.2 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.33 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.55 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.49 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.49 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-73.8 °	Yes
Time of Peak	57 - 64 ms	60.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	124.9 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	99.6 N·m	Yes
Time of Peak	47 - 58 ms	54.1 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	101.4 ms	Yes

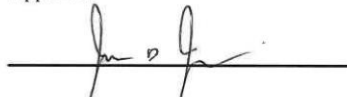
**Test meets specifications.**

**Comments:**

Technician



Approved



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

09.25.2015 10:11:43 2947

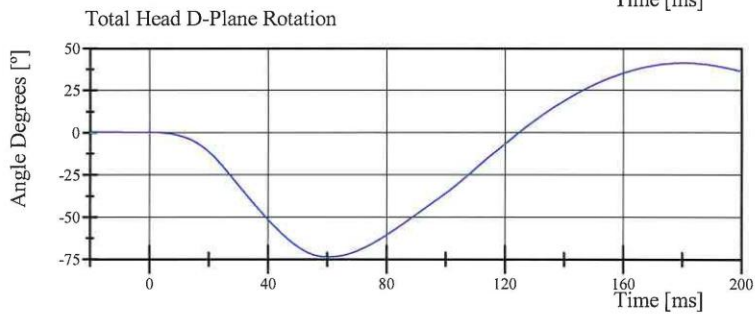
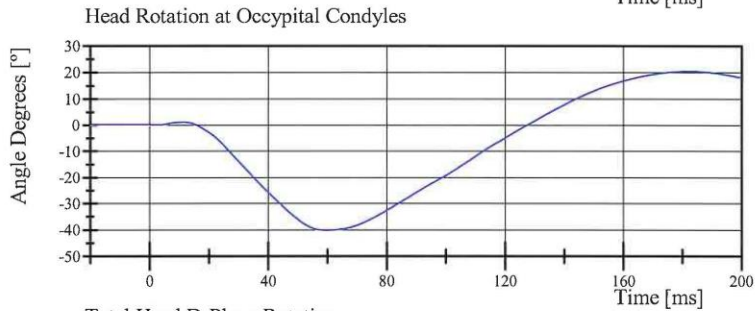
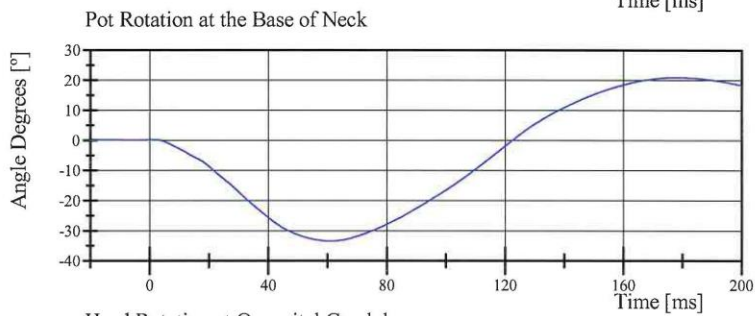
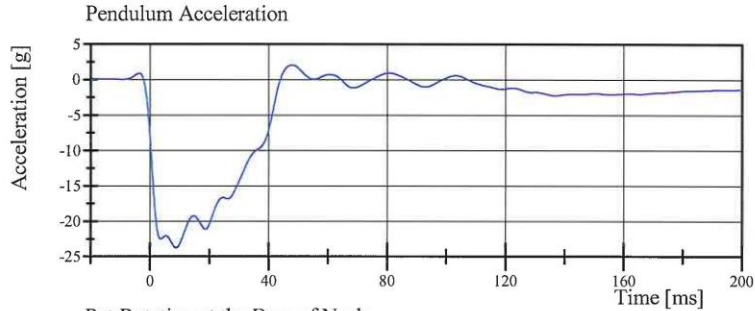


# Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 29-1

Test Date: 9/25/2015



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

09.25.2015 10:11:50 2947

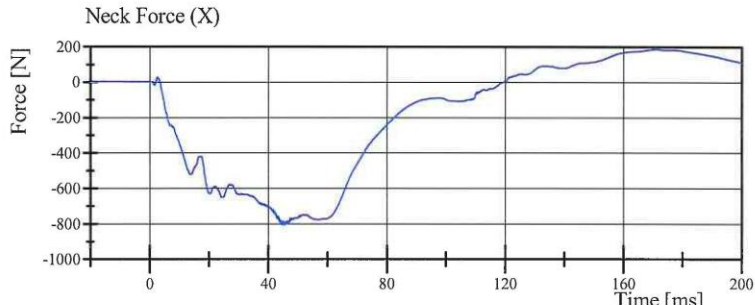


# Transportation Research Center Inc.

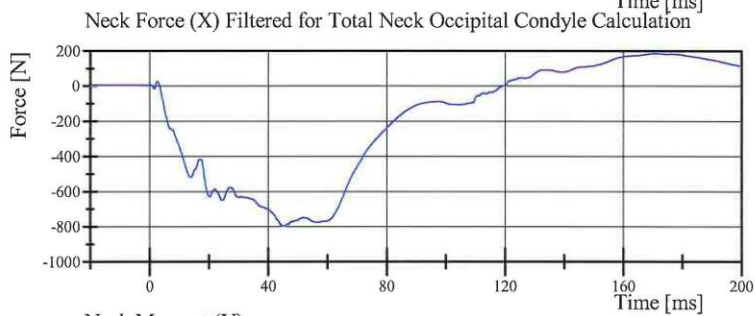
Neck Flexion

HIII 50th Serial No. 037 Certification No. 29-1

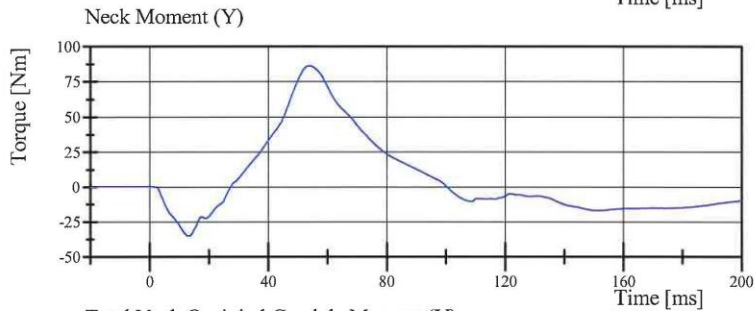
Test Date: 9/25/2015



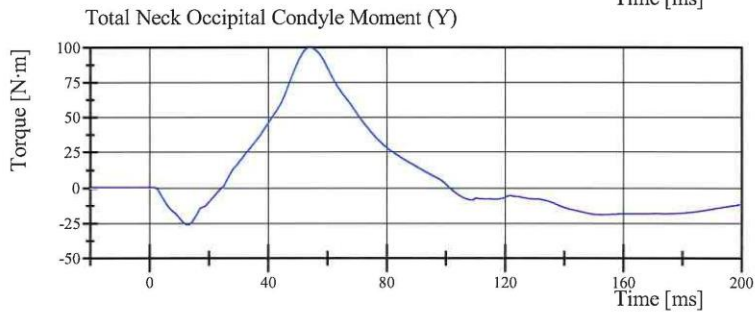
Filter Class: CFC\_1000  
Max: 186.2 N at 170.6 ms  
Min: -809.5 N at 45.6 ms



Filter Class: CFC\_600  
Max: 186.0 N at 171.4 ms  
Min: -800.8 N at 45.6 ms



Filter Class: CFC\_600  
Max: 86.1 Nm at 53.9 ms  
Min: -35.4 Nm at 13.4 ms



Filter Class: Without\_(Consta  
Max: 99.6 N·m at 54.1 ms  
Min: -26.4 N·m at 13.0 ms

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

09.25.2015 10:11:51 2947



# Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 29-1

Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.969 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	39.6 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.89 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.95 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 °	95.3 °	Yes
Time of Peak	72 - 82 ms	76.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	158.2 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-53) - (-80) N·m	-70.8 N·m	Yes
Time of Peak	65 - 79 ms	71.2 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	144.6 ms	Yes

**Test meets specifications.**

**Comments:**

Technician

  
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Approved

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

09.25.2015 10:44:13 3027

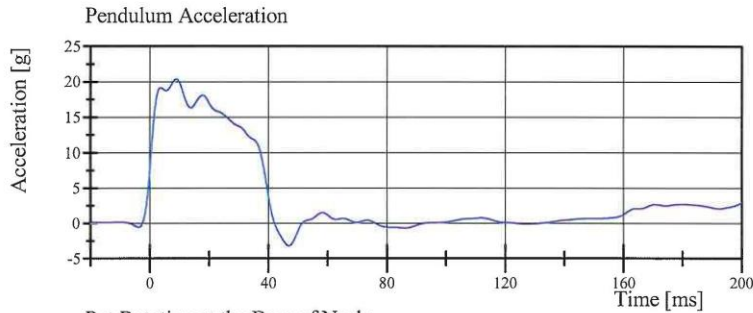


# Transportation Research Center Inc.

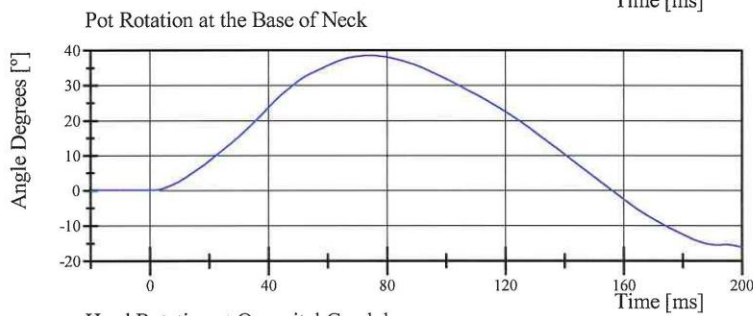
Neck Extension

HIII 50th Serial No. 037 Certification No. 29-1

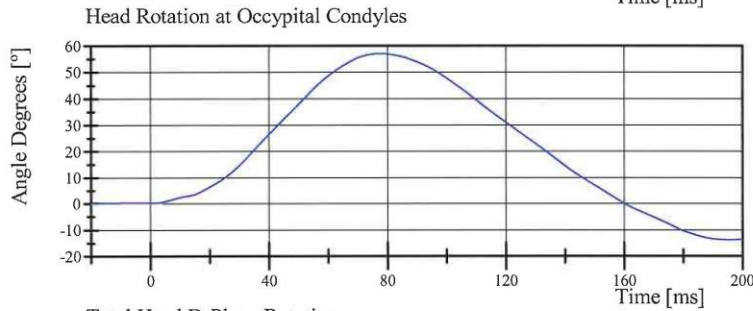
Test Date: 9/25/2015



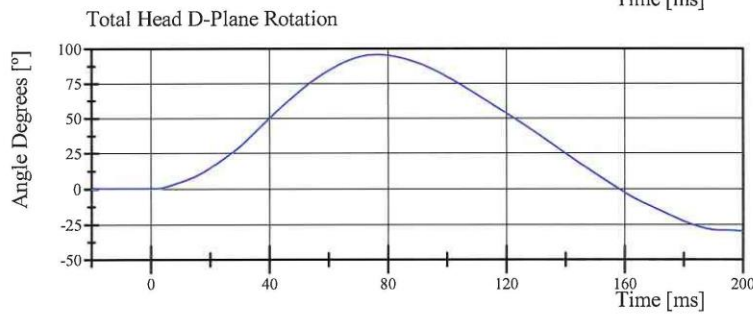
Filter Class: CFC\_60  
Max: 20.3 g at 9.0 ms  
Min: -3.3 g at 47.0 ms



Filter Class: CFC\_60  
Max: 38.5 ° at 74.1 ms  
Min: -16.1 ° at 200.0 ms



Filter Class: CFC\_60  
Max: 57.0 ° at 77.8 ms  
Min: -13.9 ° at 195.7 ms



Filter Class: CFC\_60  
Max: 95.3 ° at 76.6 ms  
Min: -29.7 ° at 200.0 ms

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

09.25.2015 10:44:19 3027

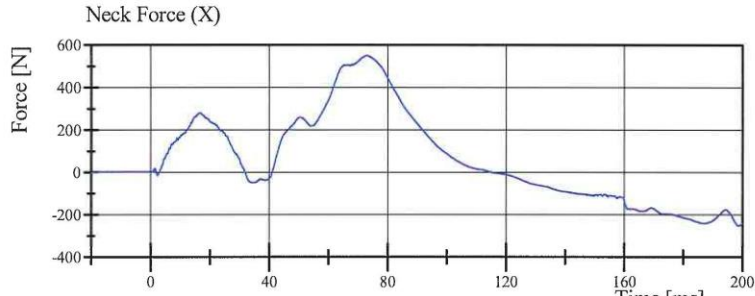


# Transportation Research Center Inc.

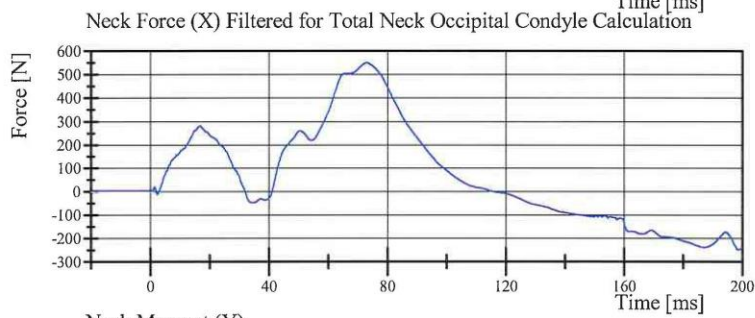
Neck Extension

HIII 50th Serial No. 037 Certification No. 29-1

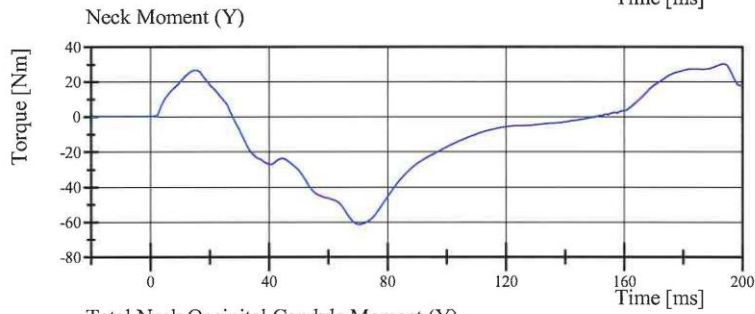
Test Date: 9/25/2015



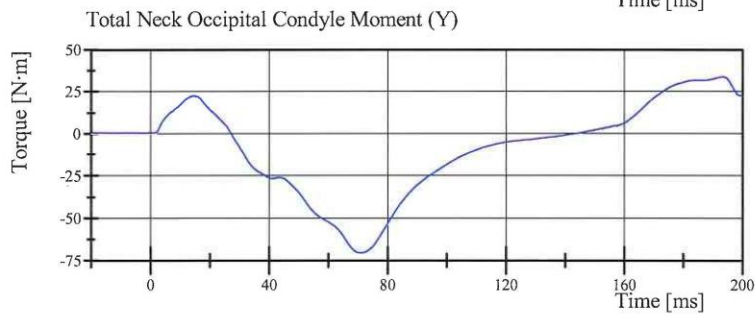
Filter Class: CFC\_1000  
Max: 549.7 N at 73.0 ms  
Min: -251.0 N at 198.6 ms



Filter Class: CFC\_600  
Max: 549.6 N at 73.1 ms  
Min: -250.1 N at 198.6 ms



Filter Class: CFC\_600  
Max: 30.4 Nm at 193.6 ms  
Min: -61.4 Nm at 70.1 ms



Filter Class: Without\_(Consta  
Max: 33.6 N·m at 193.4 ms  
Min: -70.8 N·m at 71.2 ms

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

09.25.2015 10:44:20 3027



# Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 037 Certification No. 29-1

Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.689 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,500.4 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-71.80 mm	Yes
Internal Hysteresis	65 - 85 %	73.3 %	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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

09.25.2015 11:38:43 401

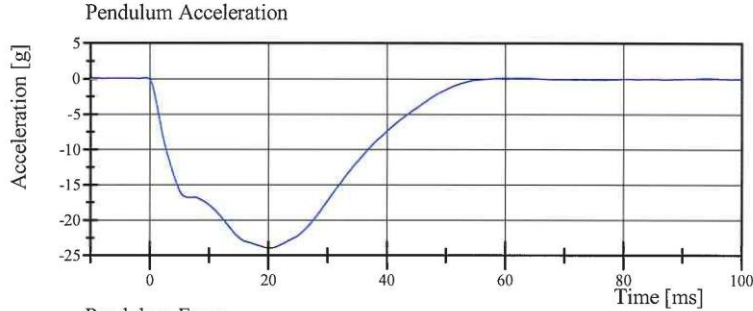


# Transportation Research Center Inc.

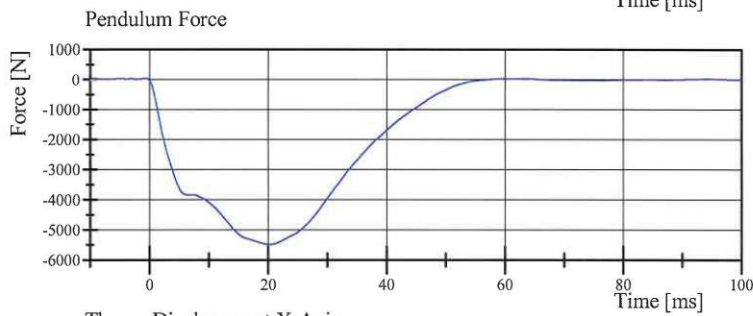
Front Thorax

HIII 50th Serial No. 037 Certification No. 29-1

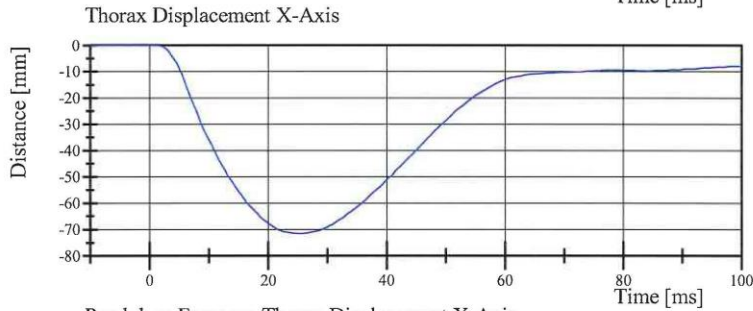
Test Date: 9/25/2015



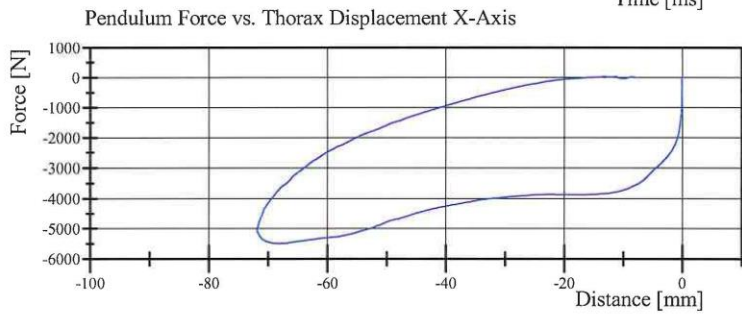
Filter Class: CFC\_180  
Max: 0.1 g at 94.1 ms  
Min: -24.0 g at 20.2 ms



Filter Class: CFC\_180  
Max: 24.6 N at 94.1 ms  
Min: -5,500.4 N at 20.2 ms



Filter Class: CFC\_600  
Max: 0.0 mm at -4.0 ms  
Min: -71.8 mm at 25.4 ms



Filter Class: CFC\_180  
Max: 24.6 N at -8.5 mm  
Min: -5,500.4 N at -68.2 mm

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

09.25.2015 11:38:50 401



# Transportation Research Center Inc.


Left Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 29-1  
Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.082 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,495.73 N	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



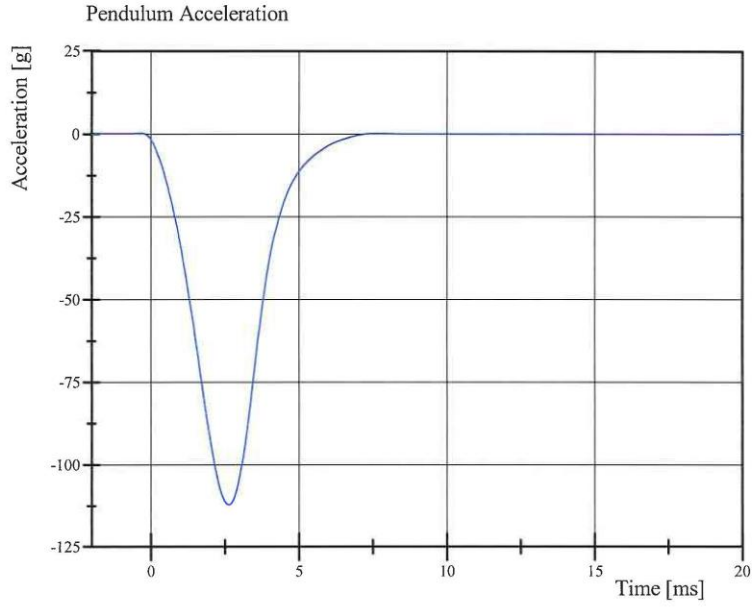
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

09.25.2015 08:26:44 1788

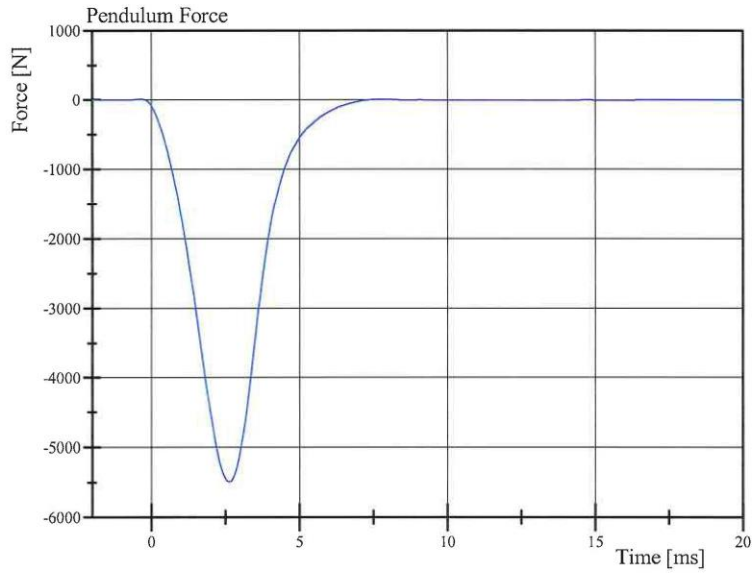


# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 29-1  
Test Date: 9/25/2015



Filter Class: CFC\_600  
Max: 0.2 g at 7.7 ms  
Min: -112.3 g at 2.6 ms



Filter Class: CFC\_600  
Max: 7.4 N at 7.7 ms  
Min: -5,495.7 N at 2.6 ms

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

09.25.2015 08:26:51 1788



# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 29-1  
Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.085 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,432.11 N	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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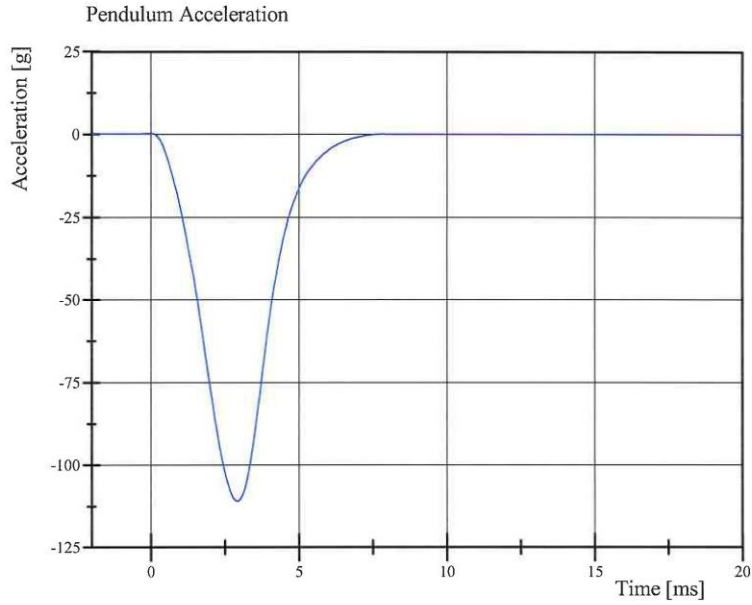
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

09.25.2015 08:32:12 1781

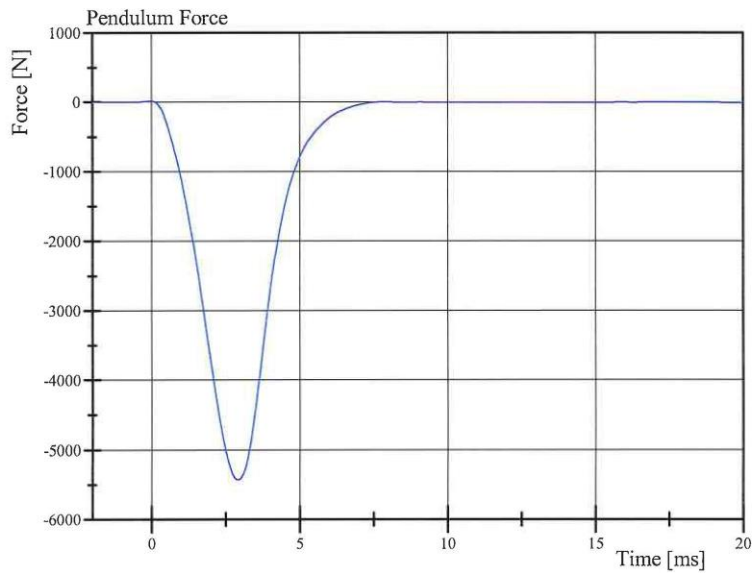


# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 29-1  
Test Date: 9/25/2015



Filter Class: CFC\_600  
Max: 0.2 g at 0.0 ms  
Min: -111.0 g at 3.0 ms



Filter Class: CFC\_600  
Max: 9.6 N at 0.0 ms  
Min: -5,432.1 N at 3.0 ms

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

09.25.2015 08:32:42 1781







**Post-Test Calibration Sheets**

**Driver S/N 037**

**Transportation Research Center Inc.**  
**572E HIII 50th Male Dummy**  
**External Dimensions**  
**Serial No. 037**  
**Calibration No. 30**

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	884	Yes
B	Shoulder Pivot Height	505.5 - 520.7	519	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	297	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	201	Yes
K	Buttock Knee Length	579.1 - 604.5	599	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	224	Yes
P	Foot Length	251.5 - 266.7	264	Yes
V	Shoulder Breadth	421.6 - 436.9	429	Yes
W	Foot Breadth	91.4 - 106.7	97	Yes
Y	Chest Circumference	970.3 - 1000.8	990	Yes
Z	Waist Circumference	835.7 - 866.1	865	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician



Approved



Revised 8/10/12



# Transportation Research Center Inc.

Front Head Drop  
HIII 50th Serial No. 037 Certification No. 30-1  
Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	250.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	7.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**


**Comments:**

Technician



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Approved



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

10.30.2015 10:23:34 612

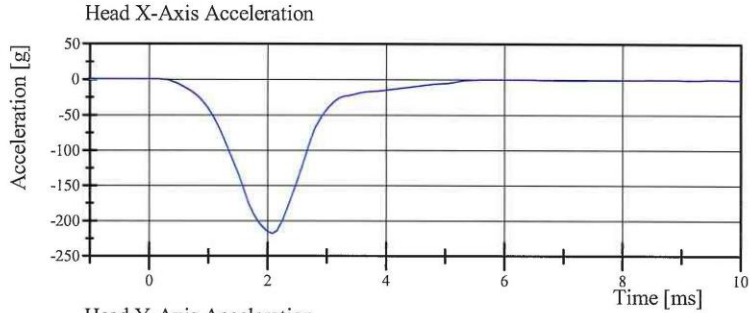


# Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 037 Certification No. 30-1

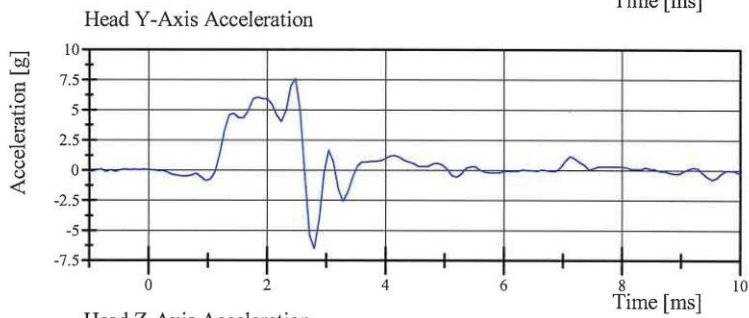
Test Date: 10/30/2015



Filter Class: CFC\_1000

Max: 0.2 g at 9.5 ms

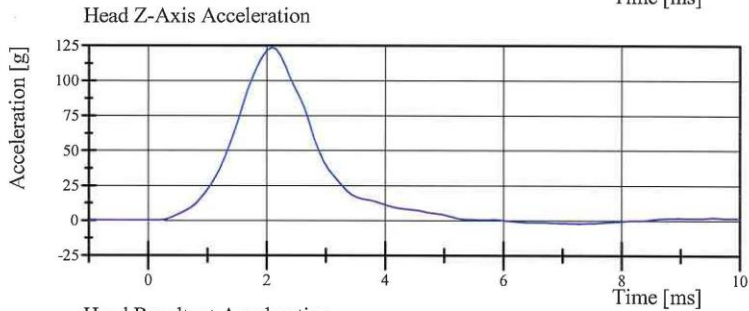
Min: -218.3 g at 2.1 ms



Filter Class: CFC\_1000

Max: 7.6 g at 2.5 ms

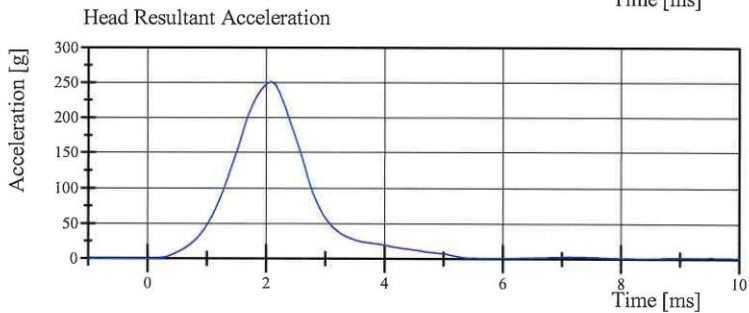
Min: -6.5 g at 2.8 ms



Filter Class: CFC\_1000

Max: 123.4 g at 2.1 ms

Min: -2.4 g at 7.3 ms



Filter Class: CFC\_1000

Max: 250.9 g at 2.1 ms

Min: 0.0 g at -0.5 ms

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

10.30.2015 10:23:42 612



# Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 30-1


Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.941 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.7 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.64 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.53 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.34 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.34 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-66.6 °	Yes
Time of Peak	57 - 64 ms	60.6 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	113 - 128 ms	121.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	100.2 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	101.9 ms	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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

10.30.2015 10:45:01 2946

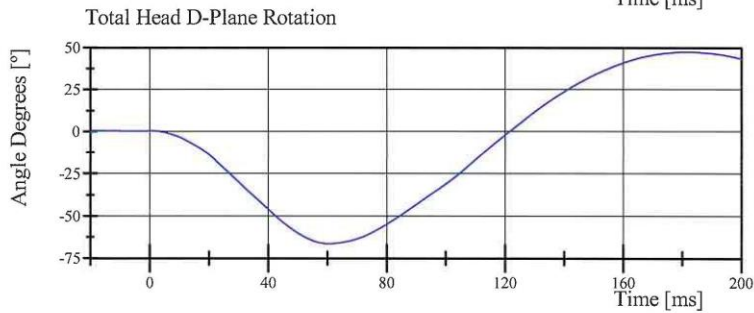
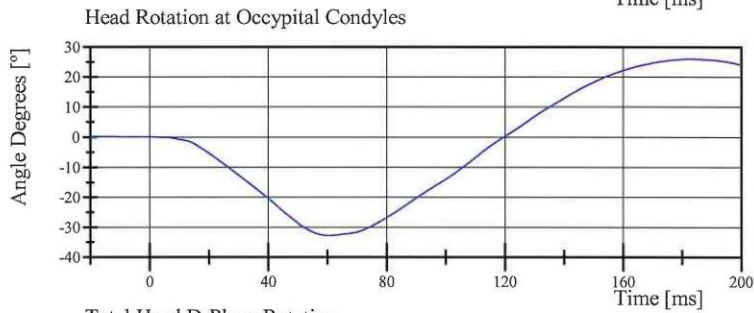
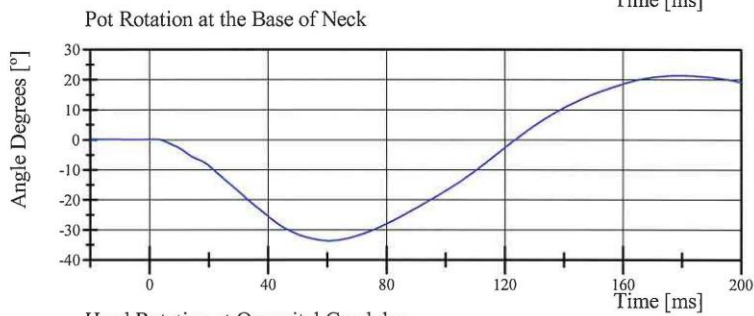
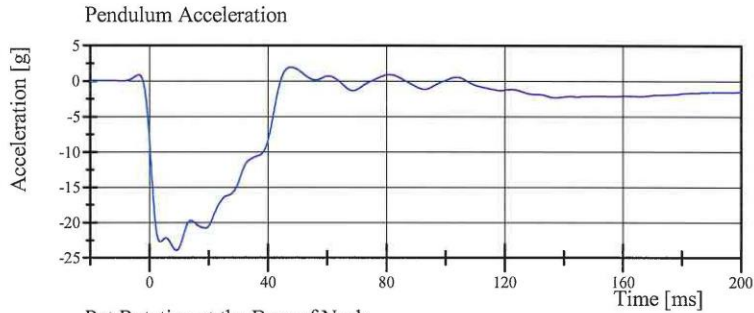


# Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 037 Certification No. 30-1

Test Date: 10/30/2015



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

10.30.2015 10:45:08 2946

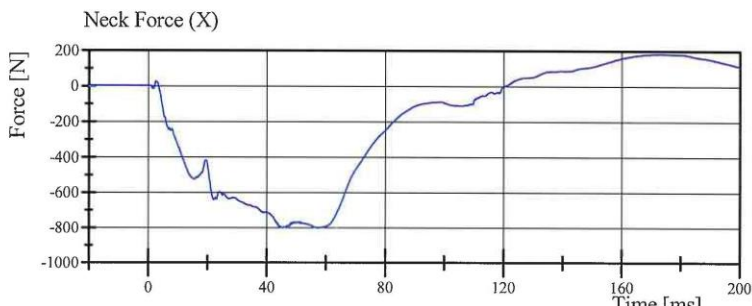


# Transportation Research Center Inc.

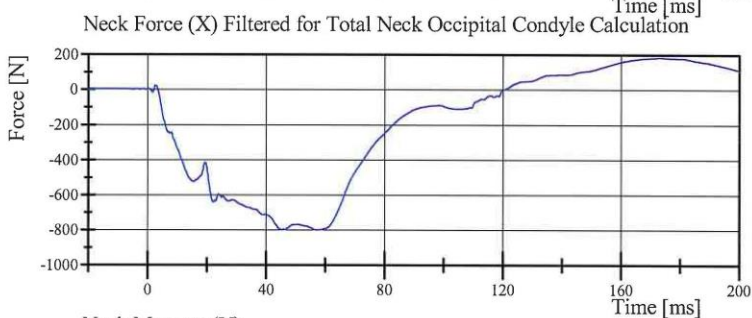
Neck Flexion

HIII 50th Serial No. 037 Certification No. 30-1

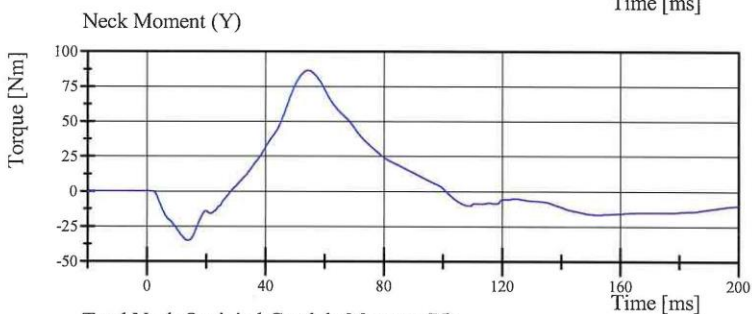
Test Date: 10/30/2015



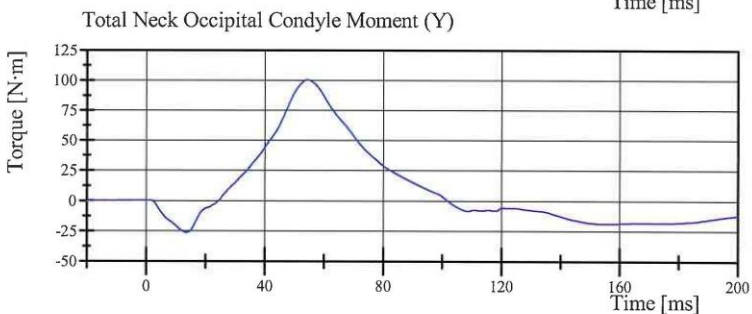
Filter Class: CFC\_1000  
Max: 184.2 N at 173.0 ms  
Min: -803.1 N at 57.0 ms



Filter Class: CFC\_600  
Max: 183.8 N at 172.8 ms  
Min: -802.7 N at 57.1 ms



Filter Class: CFC\_600  
Max: 86.3 Nm at 54.3 ms  
Min: -35.4 Nm at 13.8 ms



Filter Class: Without\_(Consta  
Max: 100.2 N.m at 54.4 ms  
Min: -26.6 N.m at 13.7 ms

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

10.30.2015 10:45:09 2946



# Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 037 Certification No. 30-3


Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.995 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	40.7 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	20.65 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.75 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.36 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.36 g	Yes
Total Head D-Plane Rotation Peak	81 - 106 °	93.2 °	Yes
Time of Peak	72 - 82 ms	77.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	158.2 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-53) - (-80) N·m	-77.9 N·m	Yes
Time of Peak	65 - 79 ms	72.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	145.4 ms	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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

10.30.2015 15:45:16 3014

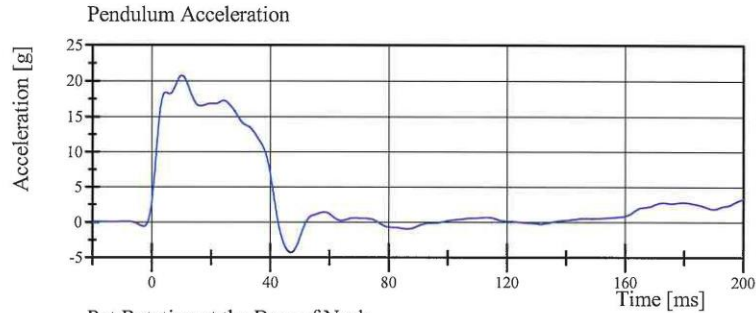


# Transportation Research Center Inc.

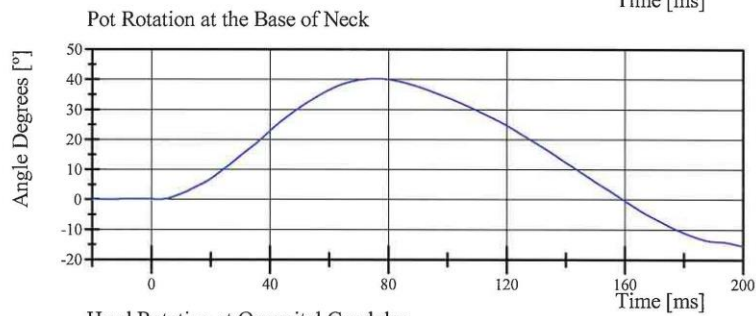
Neck Extension

HIII 50th Serial No. 037 Certification No. 30-3

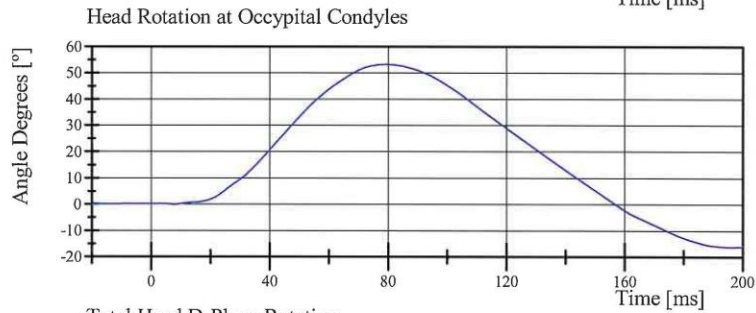
Test Date: 10/30/2015



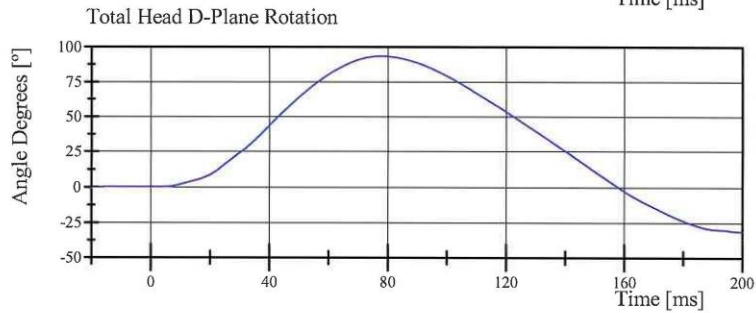
Filter Class: CFC\_60  
Max: 20.7 g at 10.2 ms  
Min: -4.3 g at 47.0 ms



Filter Class: CFC\_60  
Max: 40.2 ° at 76.0 ms  
Min: -15.3 ° at 200.0 ms



Filter Class: CFC\_60  
Max: 53.1 ° at 79.2 ms  
Min: -16.1 ° at 196.4 ms



Filter Class: CFC\_60  
Max: 93.2 ° at 77.8 ms  
Min: -31.3 ° at 200.0 ms

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

10.30.2015 15:45:25 3014

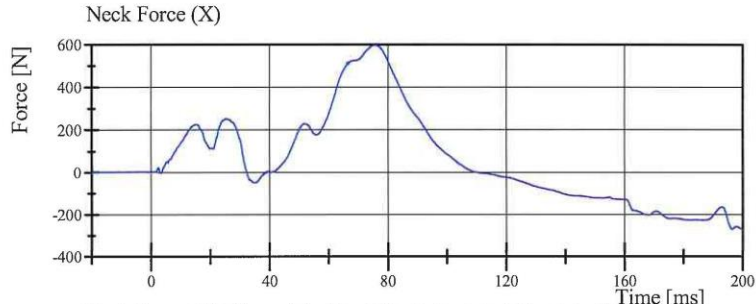


# Transportation Research Center Inc.

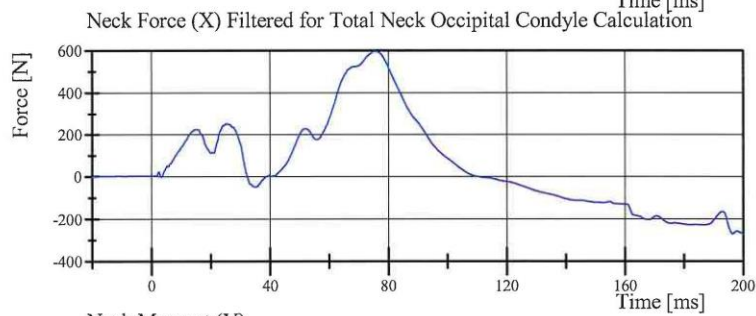
Neck Extension

HIII 50th Serial No. 037 Certification No. 30-3

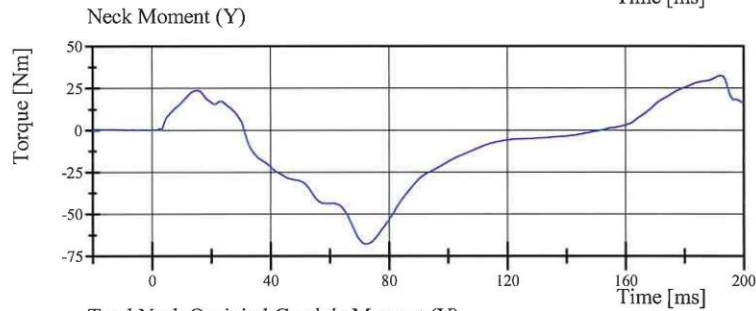
Test Date: 10/30/2015



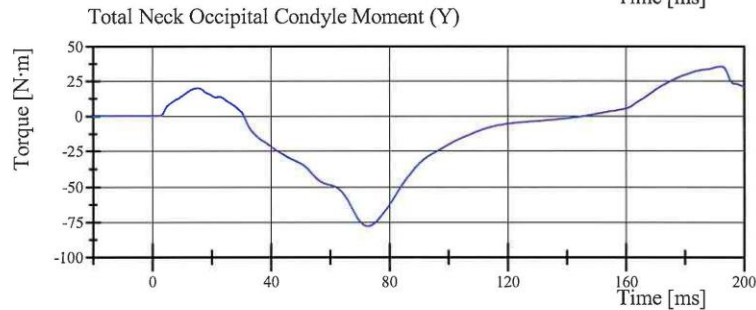
Filter Class: CFC\_1000  
Max: 596.3 N at 75.2 ms  
Min: -271.6 N at 200.0 ms



Filter Class: CFC\_600  
Max: 595.9 N at 75.3 ms  
Min: -271.7 N at 200.0 ms



Filter Class: CFC\_600  
Max: 32.6 Nm at 192.3 ms  
Min: -68.0 Nm at 72.2 ms



Filter Class: Without\_(Consta  
Max: 35.6 N·m at 192.1 ms  
Min: -77.9 N·m at 72.6 ms

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

10.30.2015 15:45:26 3014



# Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 037 Certification No. 30-1

Test Date: 11/2/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.722 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,534.8 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-69.91 mm	Yes
Internal Hysteresis	65 - 85 %	72.8 %	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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

11.02.2015 08:08:25 412

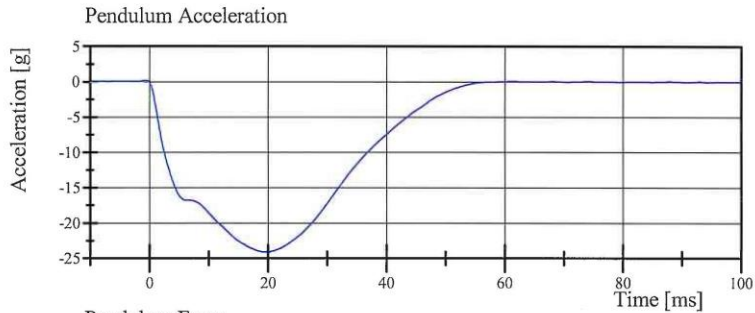


# Transportation Research Center Inc.

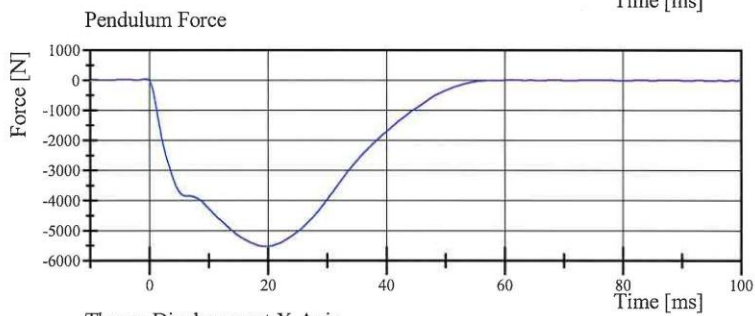
Front Thorax

HIII 50th Serial No. 037 Certification No. 30-1

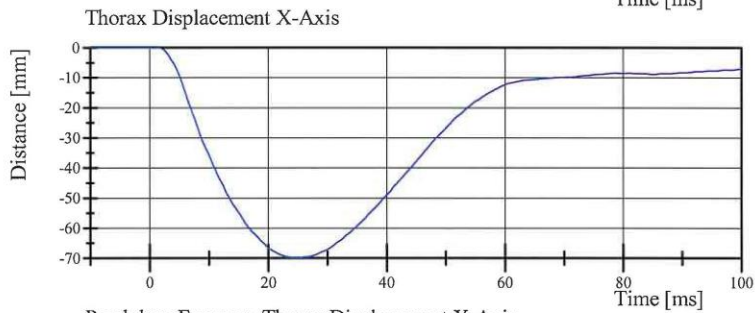
Test Date: 11/2/2015



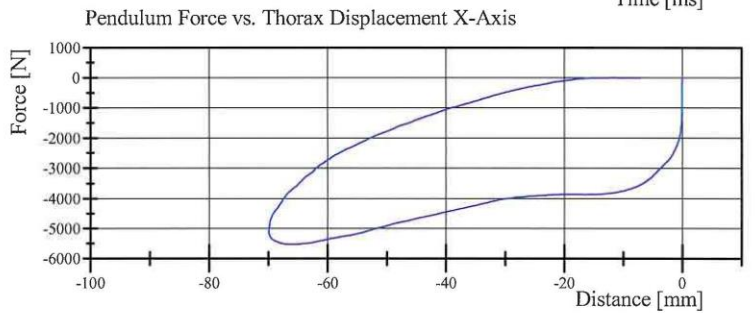
Filter Class: CFC\_180  
Max: 0.1 g at -0.6 ms  
Min: -24.2 g at 19.8 ms



Filter Class: CFC\_180  
Max: 25.1 N at -0.6 ms  
Min: -5,534.8 N at 19.8 ms



Filter Class: CFC\_600  
Max: 0.0 mm at -5.0 ms  
Min: -69.9 mm at 24.4 ms



Filter Class: CFC\_180  
Max: 25.1 N at -0.0 mm  
Min: -5,534.8 N at -66.3 mm

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

11.02.2015 08:08:34 412



# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 30-1  
Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.082 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,597.01 N	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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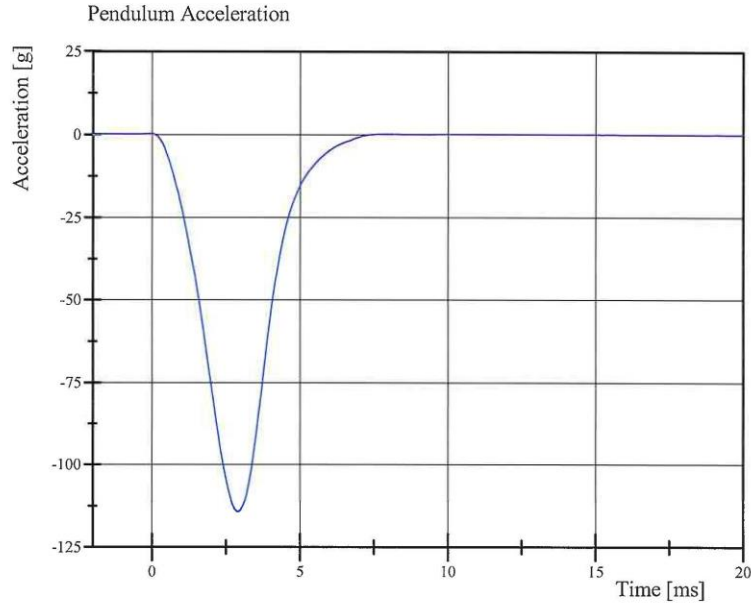
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

10.30.2015 11:35:28 1857

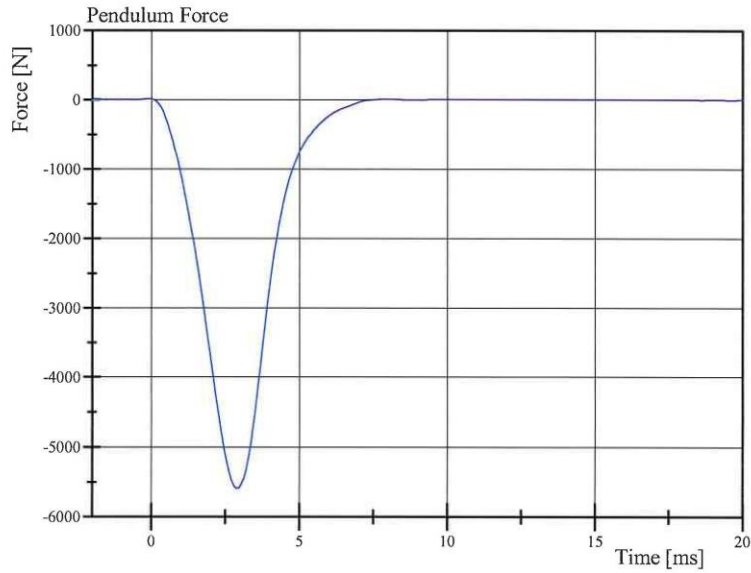


# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 30-1  
Test Date: 10/30/2015



Filter Class: CFC\_600  
Max: 0.1 g at -0.1 ms  
Min: -114.4 g at 2.9 ms



Filter Class: CFC\_600  
Max: 6.9 N at -0.1 ms  
Min: -5,597.0 N at 2.9 ms

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

10.30.2015 11:35:36 1857



# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 30-1  
Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.081 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,406.01 N	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



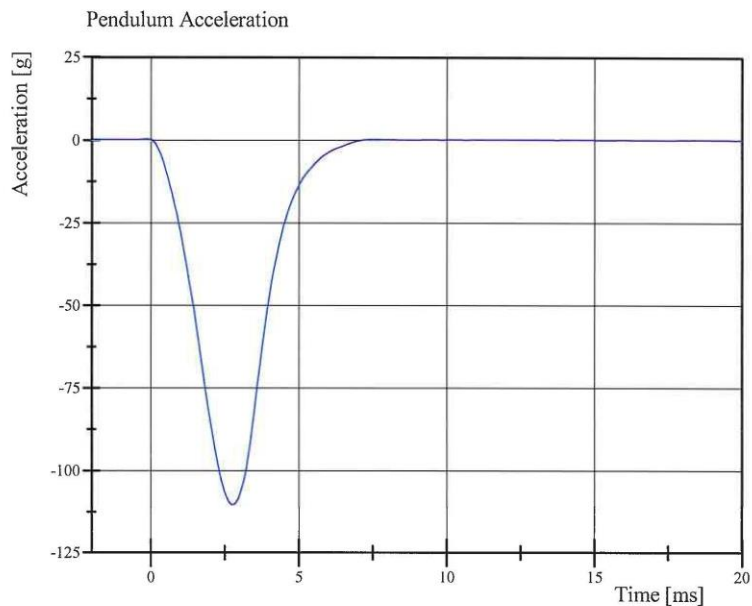
Specification Source: CFR49 Part 572 Subpart E  
with Polarity in accordance with J211

10.30.2015 12:41:32 1858

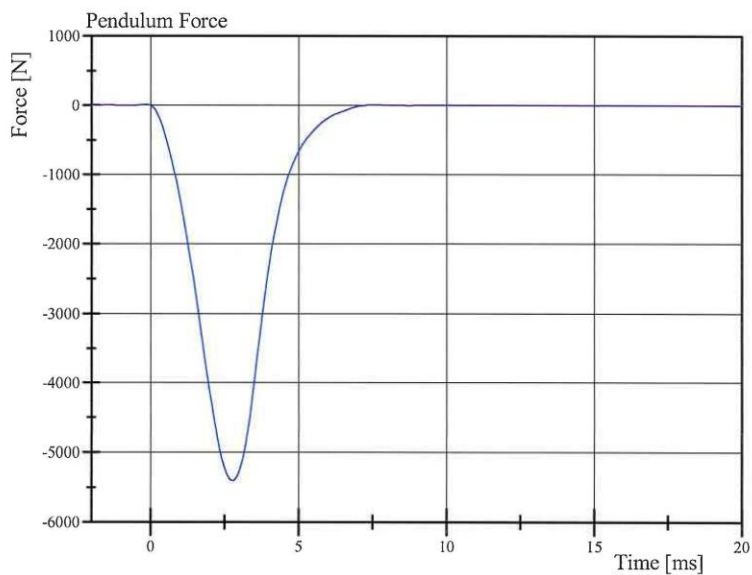


# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 50th Serial No. 037 Certification No. 30-1  
Test Date: 10/30/2015



Filter Class: CFC\_600  
Max: 0.2 g at -0.2 ms  
Min: -110.5 g at 2.8 ms



Filter Class: CFC\_600  
Max: 8.8 N at -0.2 ms  
Min: -5,406.0 N at 2.8 ms

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

10.30.2015 12:41:39 1858








**Pre-Test Calibration Sheets**

**Front Passenger S/N 426**

**Transportation Research Center Inc.**  
**5720 HIII 5th Dummy**  
**External Dimensions**  
**Serial No. 426 Calibration No. 31**

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	780	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	147	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	78	Yes
F	Thigh Clearance	119.4 - 134.6	130	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	250	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	283	Yes
J	Elbow Rest Height	182.8 - 203.2	193	Yes
K	Buttock Knee Length	520.7 - 546.1	534	Yes
L	Popliteal Height	355.6 - 376.0	368	Yes
M	Knee Pivot Height	393.7 - 419.1	410	Yes
N	Buttock Popliteal Length	414.0 - 439.4	435	Yes
O	Chest Depth without Jacket	175.3 - 190.5	185	Yes
P	Foot Length	218.5 - 233.7	222	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	473	Yes
S	Head Breadth	137.1 - 147.3	140	Yes
T	Head Depth	177.8 - 188.0	182	Yes
U	Hip Breadth	299.7 - 314.9	306	Yes
V	Shoulder Breadth	350.5 - 365.7	358	Yes
W	Foot Breadth	78.8 - 94.0	83	Yes
X	Head Circumference	528.3 - 548.7	539	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	866	Yes
Z	Waist Circumference	759.5 - 789.9	774	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	345	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician



Approved



Revised 8/10/12



## Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 426 Certification No. 31-1

Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	279.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-7.1 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



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

09.25.2015 13:41:41 609

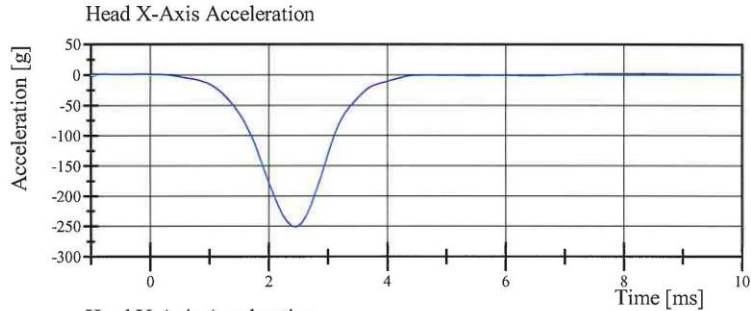


# Transportation Research Center Inc.

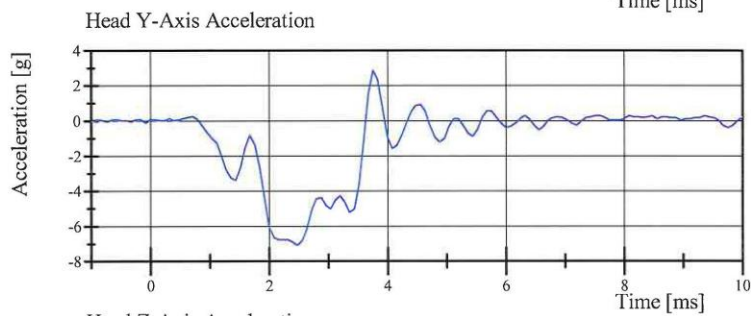
Front Head Drop

HIII 5th Serial No. 426 Certification No. 31-1

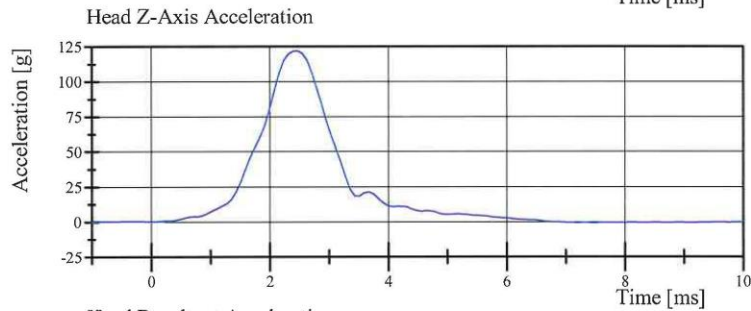
Test Date: 9/25/2015



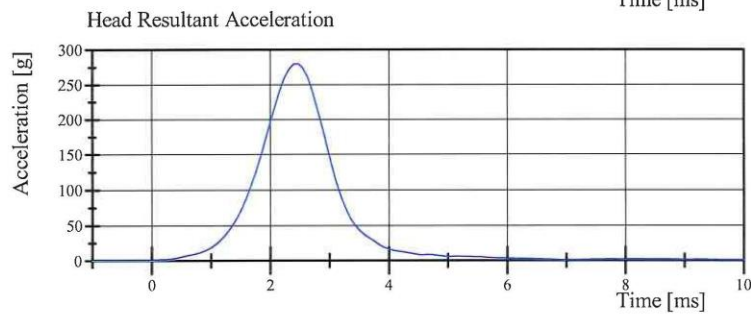
Filter Class: CFC\_1000  
Max: 2.1 g at 8.3 ms  
Min: -251.1 g at 2.5 ms



Filter Class: CFC\_1000  
Max: 2.9 g at 3.8 ms  
Min: -7.1 g at 2.5 ms



Filter Class: CFC\_1000  
Max: 121.6 g at 2.5 ms  
Min: -0.6 g at 7.2 ms



Filter Class: CFC\_1000  
Max: 279.1 g at 2.5 ms  
Min: 0.0 g at -0.6 ms

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

09.25.2015 13:41:48 609



## Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 31-3

Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.100 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.17 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.21 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-5.91 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-77.5 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N-m	72.3 N-m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N-m	80 - 100 ms	89.1 ms	Yes

Test meets specifications.

Comments:

Technician



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Approved



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

09.25.2015 15:08:01 1705

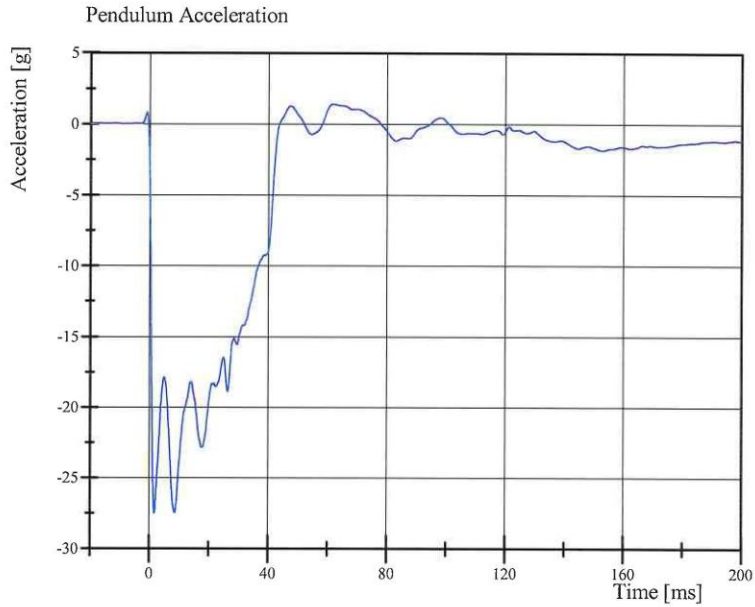


# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 31-3

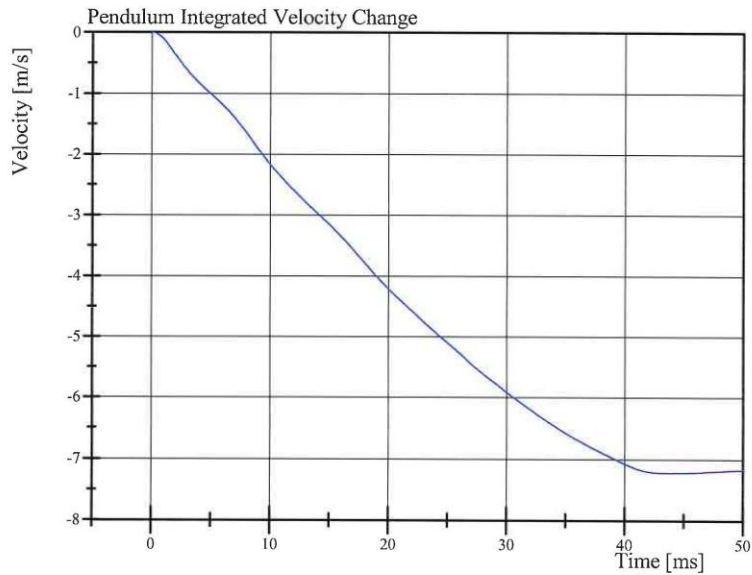
Test Date: 9/25/2015



Filter Class: CFC\_180

Max: 1.4 g at 61.6 ms

Min: -27.5 g at 1.9 ms



Filter Class: CFC\_180

Max: 0.0 m/s at 0.0 ms

Min: -7.2 m/s at 43.9 ms

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

09.25.2015 15:08:09 1705



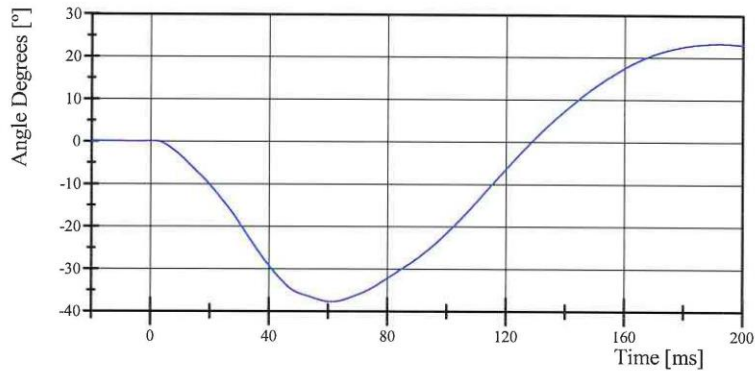
# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 31-3

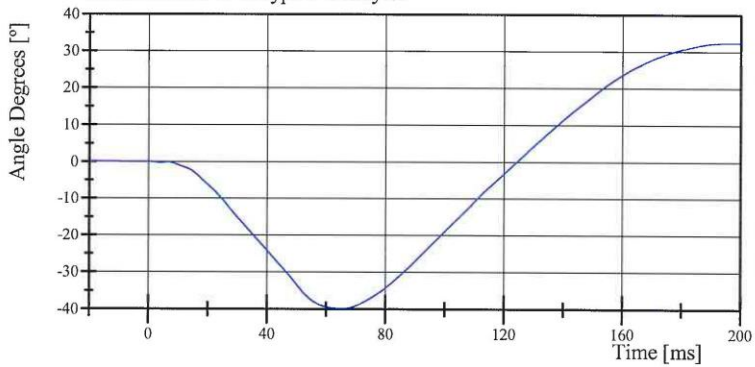
Test Date: 9/25/2015

Pot Rotation at the Base of Neck



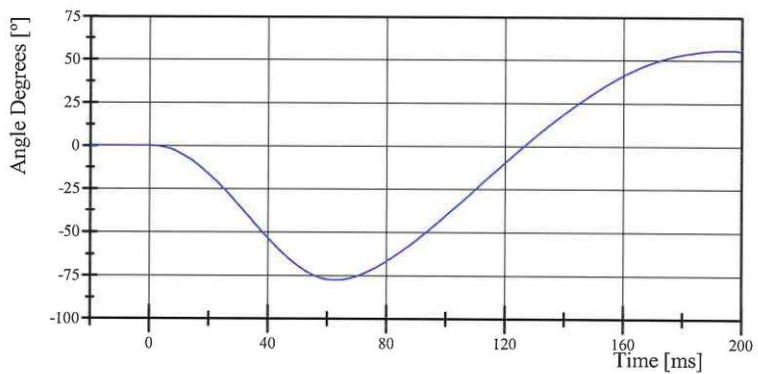
Filter Class: CFC\_60  
Max: 23.4 ° at 192.1 ms  
Min: -37.8 ° at 61.3 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 32.5 ° at 197.1 ms  
Min: -39.9 ° at 65.3 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 55.8 ° at 194.4 ms  
Min: -77.5 ° at 62.9 ms

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

09.25.2015 15:08:09 1705

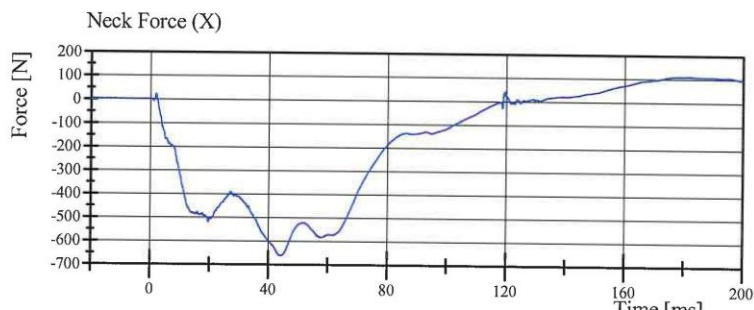


# Transportation Research Center Inc.

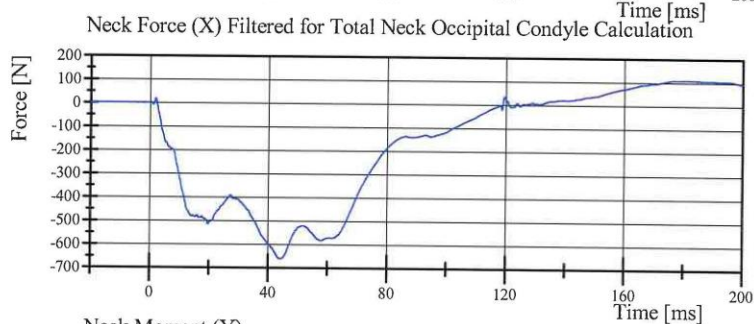
Neck Flexion

HIII 5th Serial No. 426 Certification No. 31-3

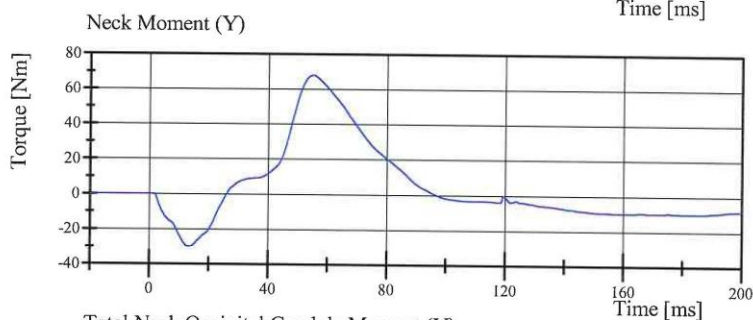
Test Date: 9/25/2015



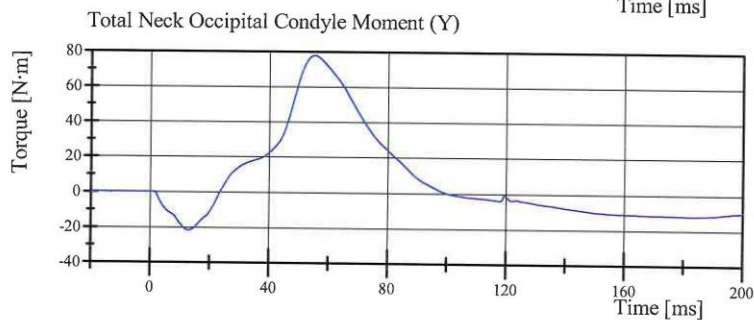
Filter Class: CFC\_1000  
Max: 112.7 N at 181.6 ms  
Min: -662.5 N at 44.5 ms



Filter Class: CFC\_600  
Max: 112.0 N at 181.5 ms  
Min: -661.4 N at 44.0 ms



Filter Class: CFC\_600  
Max: 67.9 Nm at 55.0 ms  
Min: -30.1 Nm at 13.5 ms



Filter Class: Without\_(Consta  
Max: 77.8 N·m at 55.4 ms  
Min: -21.8 N·m at 12.9 ms

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

09.25.2015 15:08:10 1705



# Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 426 Certification No. 31-2

Test Date: 9/28/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.7 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.100 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.85 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.72 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.23 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	105.1 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-56.4 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	104.5 ms	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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

09.28.2015 09:21:03 1831

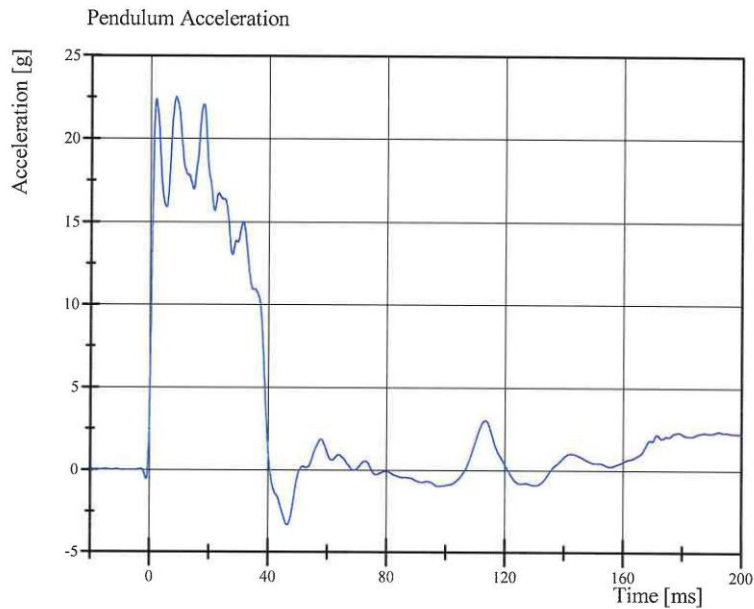


# Transportation Research Center Inc.

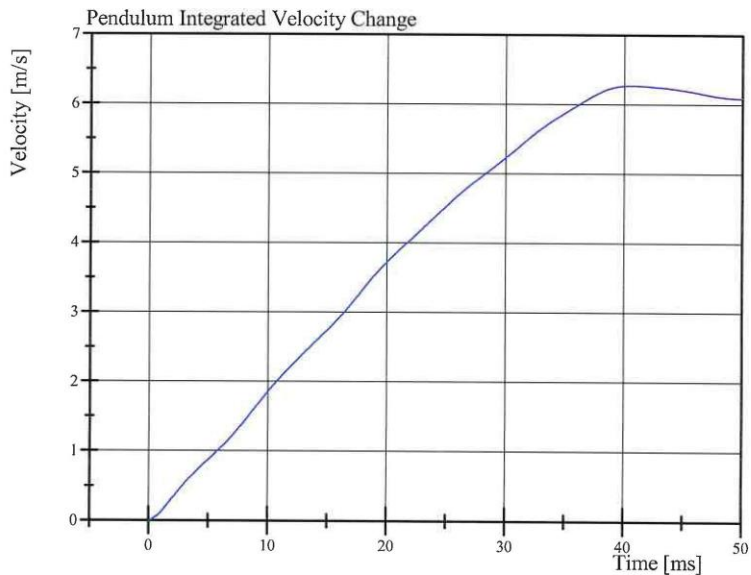
Neck Extension

HIII 5th Serial No. 426 Certification No. 31-2

Test Date: 9/28/2015



Filter Class: CFC\_180  
Max: 22.5 g at 8.6 ms  
Min: -3.3 g at 46.6 ms



Filter Class: CFC\_180  
Max: 6.3 m/s at 40.6 ms  
Min: 0.0 m/s at 0.0 ms

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

09.28.2015 09:21:10 1831

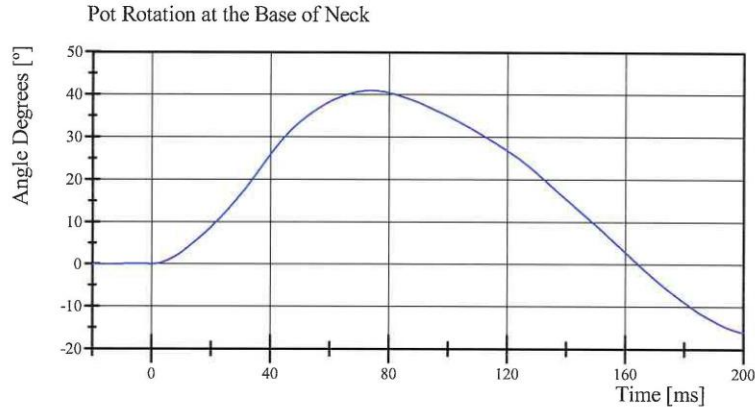


# Transportation Research Center Inc.

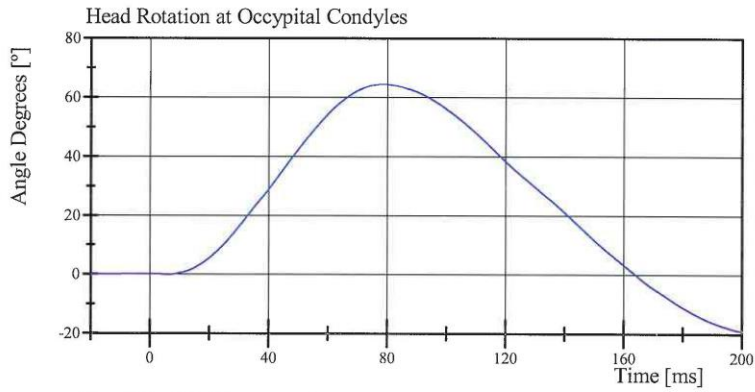
Neck Extension

HIII 5th Serial No. 426 Certification No. 31-2

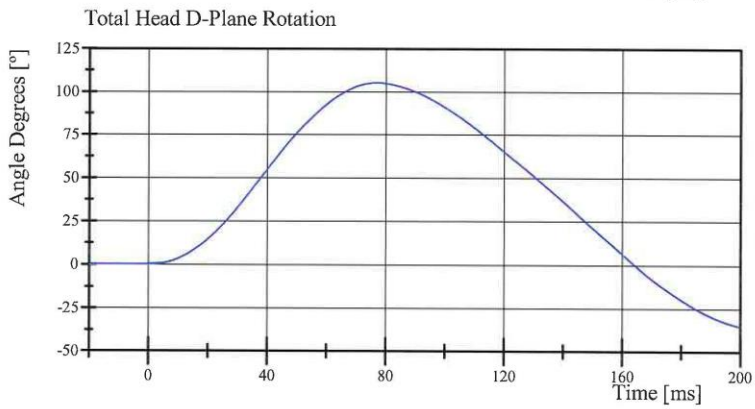
Test Date: 9/28/2015



Filter Class: CFC\_60  
Max: 40.9 ° at 73.8 ms  
Min: -16.0 ° at 200.0 ms



Filter Class: CFC\_60  
Max: 64.5 ° at 78.5 ms  
Min: -19.1 ° at 200.0 ms



Filter Class: CFC\_60  
Max: 105.1 ° at 77.1 ms  
Min: -35.0 ° at 200.0 ms

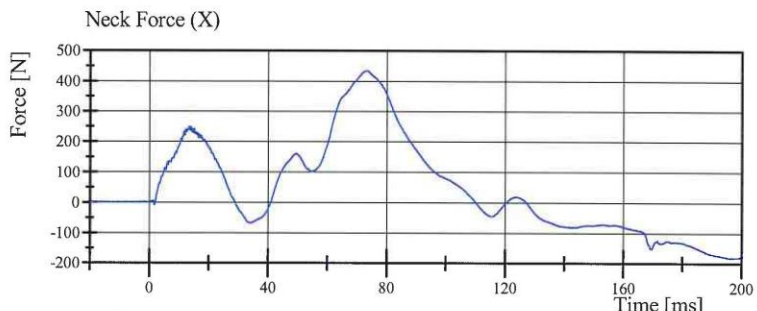
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

09.28.2015 09:21:11 1831

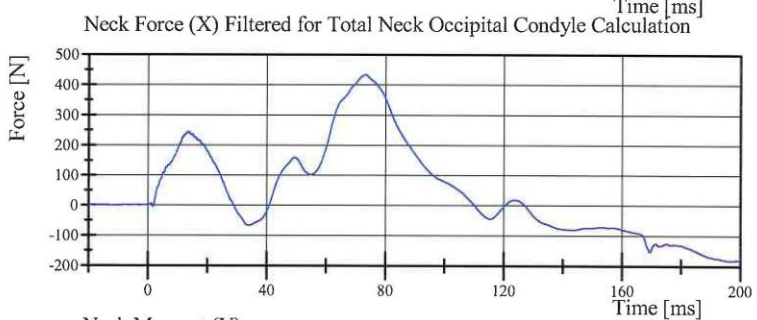


# Transportation Research Center Inc.

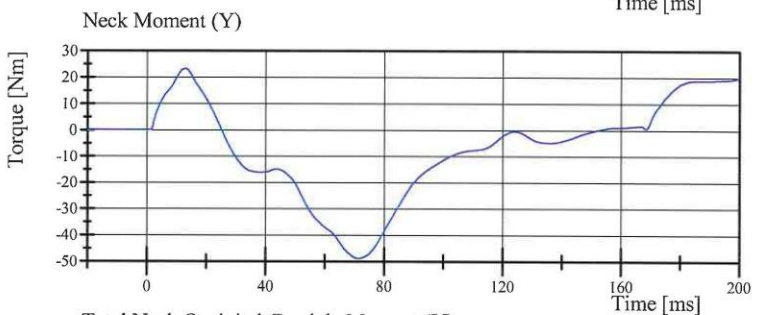
Neck Extension  
HIII 5th Serial No. 426 Certification No. 31-2  
Test Date: 9/28/2015



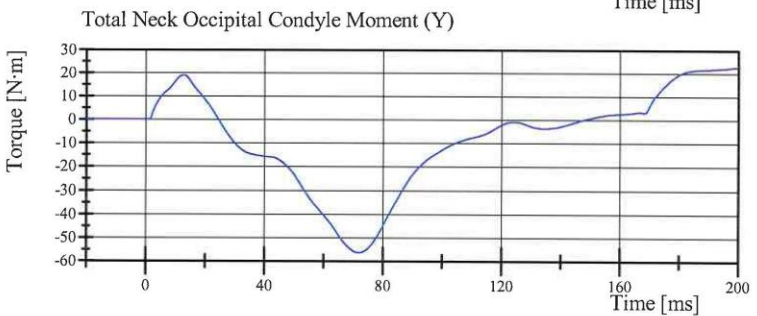
Filter Class: CFC\_1000  
Max: 434.6 N at 73.0 ms  
Min: -181.8 N at 196.4 ms



Filter Class: CFC\_600  
Max: 434.3 N at 73.2 ms  
Min: -181.1 N at 196.3 ms



Filter Class: CFC\_600  
Max: 23.3 Nm at 13.2 ms  
Min: -48.8 Nm at 71.4 ms



Filter Class: Without\_(Consta  
Max: 23.0 N·m at 200.0 ms  
Min: -56.4 N·m at 72.1 ms

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

09.28.2015 09:21:12 1831



# Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 426 Certification No. 31-1

Test Date: 9/28/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.641 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,256.9 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	$\geq$ (-4,600) N	-4,266.9 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-51.6 mm	Yes
Internal Hysteresis	69 - 85 %	76.2 %	Yes

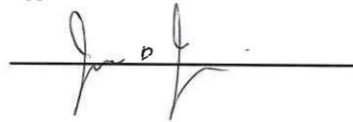
**Test meets specifications.**

**Comments:**

Technician



Approved



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

09.28.2015 10:34:45 412

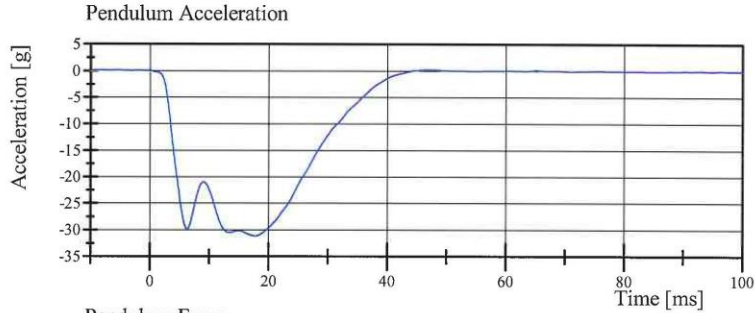


# Transportation Research Center Inc.

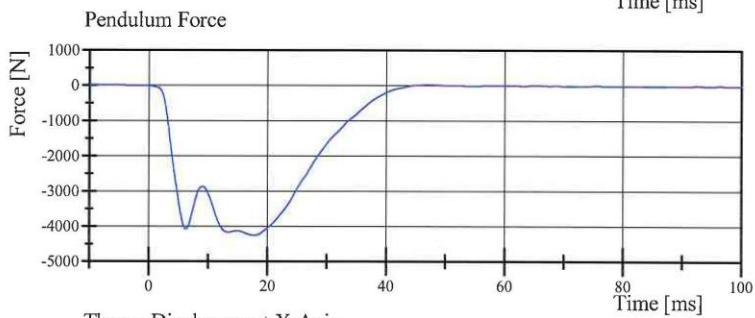
Front Thorax

HIII 5th Serial No. 426 Certification No. 31-1

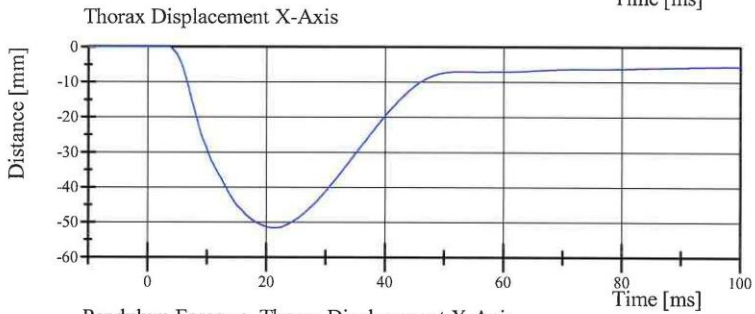
Test Date: 9/28/2015



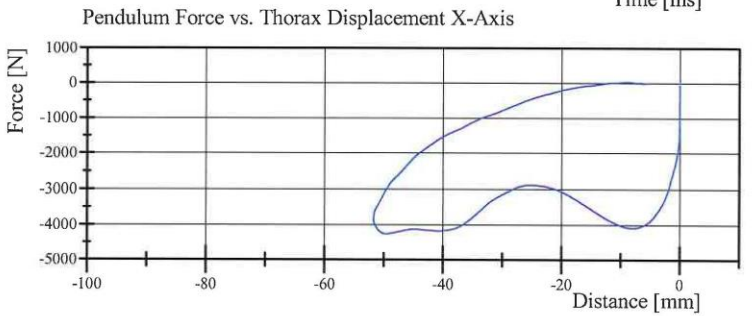
Filter Class: CFC\_180  
Max: 0.2 g at 47.3 ms  
Min: -31.1 g at 17.8 ms



Filter Class: CFC\_180  
Max: 26.4 N at 47.3 ms  
Min: -4,266.9 N at 17.8 ms



Filter Class: CFC\_600  
Max: 0.0 mm at -4.6 ms  
Min: -51.6 mm at 21.2 ms



Filter Class: CFC\_180  
Max: 26.4 N at -8.8 mm  
Min: -4,266.9 N at -49.5 mm

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

09.28.2015 10:34:54 412



## Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 31-1  
Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.084 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,934.2 N	Yes


**Test meets specifications.**

**Comments:**

Technician

  
\_\_\_\_\_

Approved

  
\_\_\_\_\_

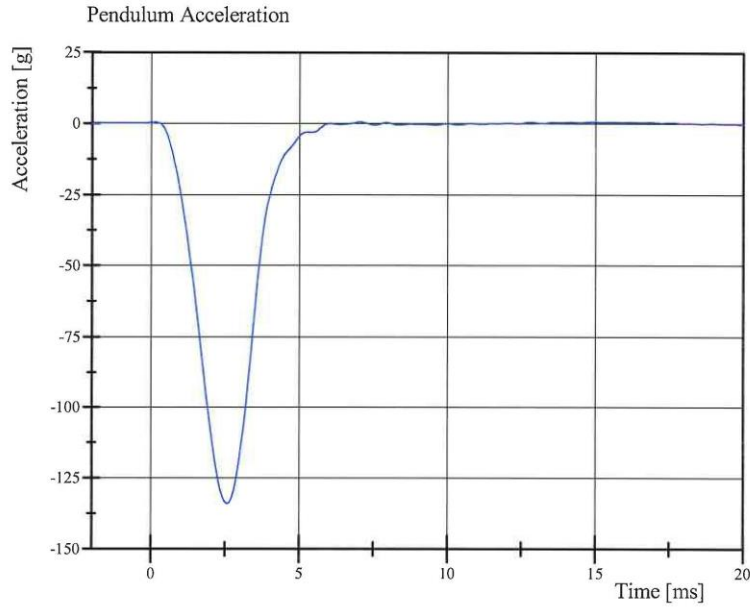
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

09.25.2015 13:25:00 1784

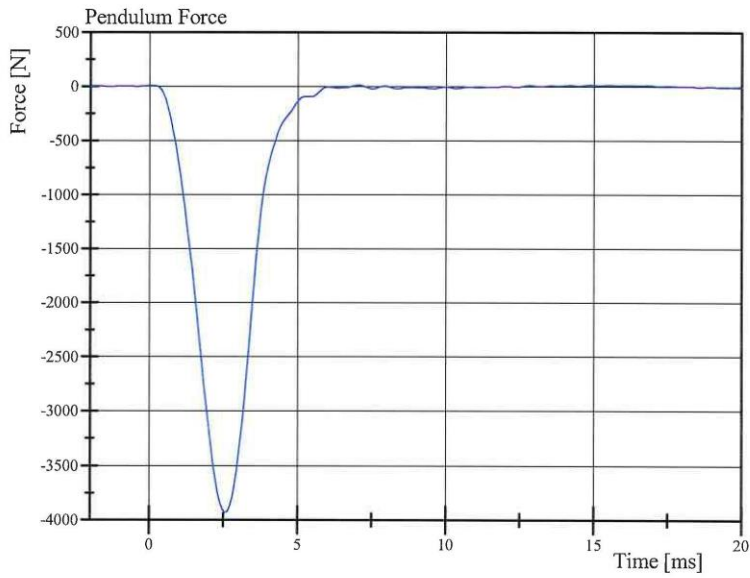


# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 31-1  
Test Date: 9/25/2015



Filter Class: CFC\_600  
Max: 0.6 g at 14.9 ms  
Min: -134.2 g at 2.6 ms



Filter Class: CFC\_600  
Max: 16.9 N at 14.9 ms  
Min: -3,934.2 N at 2.6 ms

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

09.25.2015 13:25:08 1784



# Transportation Research Center Inc.

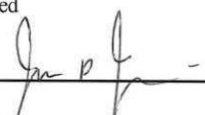
Right Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 31-1  
Test Date: 9/25/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.082 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,723.3 N	Yes

**Test meets specifications.**

**Comments:**

Technician  
  
\_\_\_\_\_

Approved  
  
\_\_\_\_\_

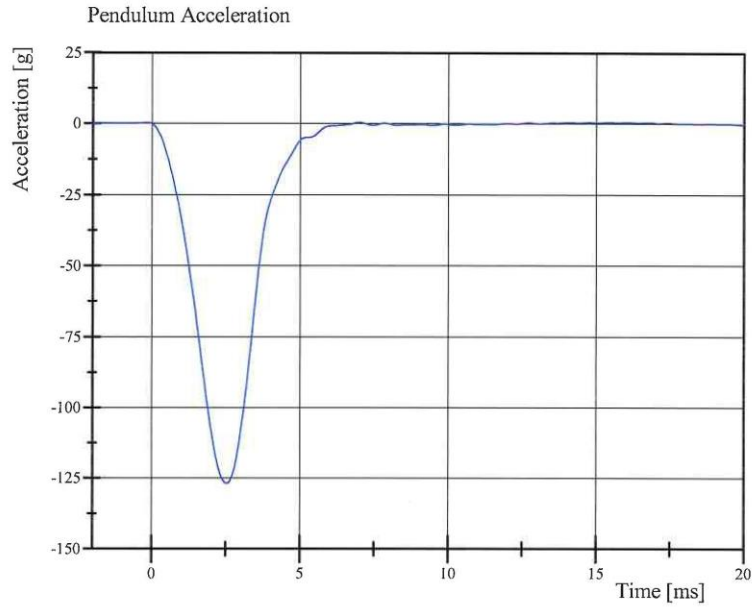
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

09.25.2015 13:30:56 1784

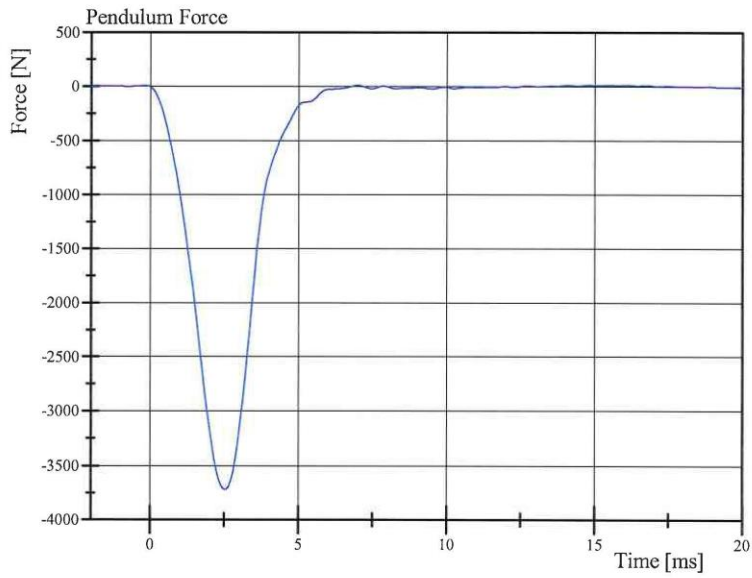


# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 31-1  
Test Date: 9/25/2015



Filter Class: CFC\_600  
Max: 0.5 g at 16.0 ms  
Min: -127.0 g at 2.6 ms



Filter Class: CFC\_600  
Max: 14.8 N at 16.0 ms  
Min: -3,723.3 N at 2.6 ms

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

09.25.2015 13:31:02 1784



# Transportation Research Center Inc.

Hybrid III Small Female Torso Flexion



Serial Number: 426

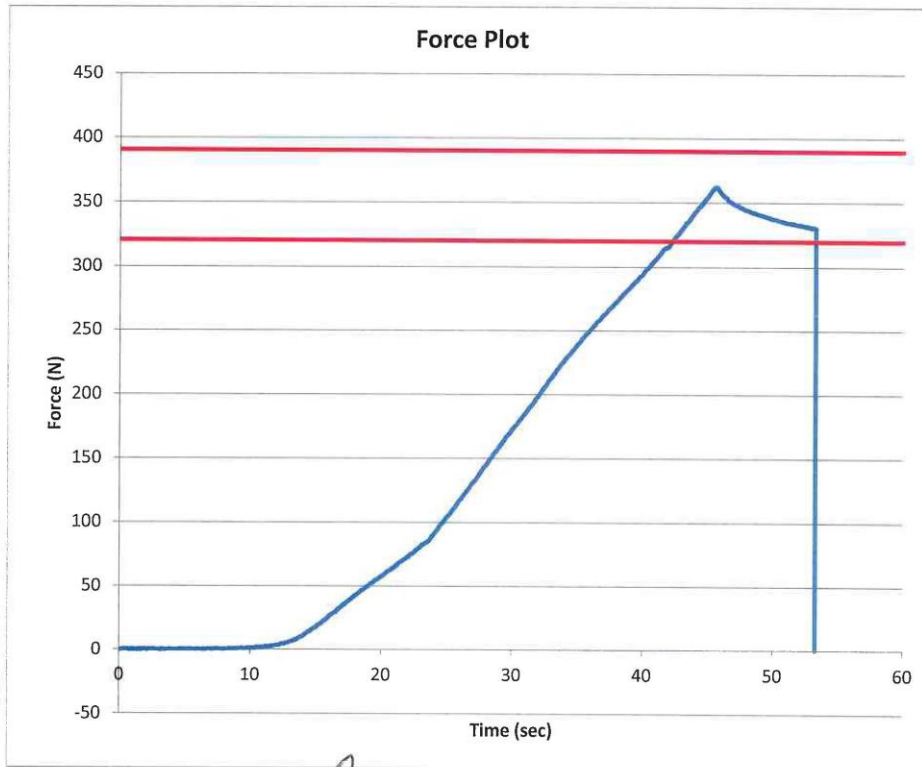
Date: 9/28/2015

Test Number: 1

Time: 11:50

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.1 °C Pass
Humidity	10 - 70	53 % Pass
Average Angular Velocity	0.5 - 1.5	0.86 deg/sec Pass
Initial Angle	0 - 20	16.24 deg Pass
Peak Force at 45.21°	320 - 390	362.47 N Pass
Final Angle	-8 - 8	5.88 deg Pass



Technician

Approved

**Post-Test Calibration Sheets**

**Front Passenger S/N 426**

**Transportation Research Center Inc.**  
**5720 HIII 5th Dummy**  
**External Dimensions**  
**Serial No. 426 Calibration No. 32**

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	442	Yes
C	Hip Pivot Height	81.3 - 86.3	84	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	78	Yes
F	Thigh Clearance	119.4 - 134.6	130	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	251	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	283	Yes
J	Elbow Rest Height	182.8 - 203.2	194	Yes
K	Buttock Knee Length	520.7 - 546.1	534	Yes
L	Popliteal Height	355.6 - 376.0	369	Yes
M	Knee Pivot Height	393.7 - 419.1	411	Yes
N	Buttock Popliteal Length	414.0 - 439.4	432	Yes
O	Chest Depth without Jacket	175.3 - 190.5	182	Yes
P	Foot Length	218.5 - 233.7	223	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	473	Yes
S	Head Breadth	137.1 - 147.3	140	Yes
T	Head Depth	177.8 - 188.0	181	Yes
U	Hip Breadth	299.7 - 314.9	306	Yes
V	Shoulder Breadth	350.5 - 365.7	358	Yes
W	Foot Breadth	78.8 - 94.0	83	Yes
X	Head Circumference	528.3 - 548.7	539	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	866	Yes
Z	Waist Circumference	759.5 - 789.9	774	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	345	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician

*Melissa Schenker*

Approved

*[Signature]*



Revised 8/10/12

## Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 426 Certification No. 32-1

Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	279.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-12.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**

**Comments:**

Technician

Melissa Schinkee

Approved

[Signature]

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

10.30.2015 15:35:29 608

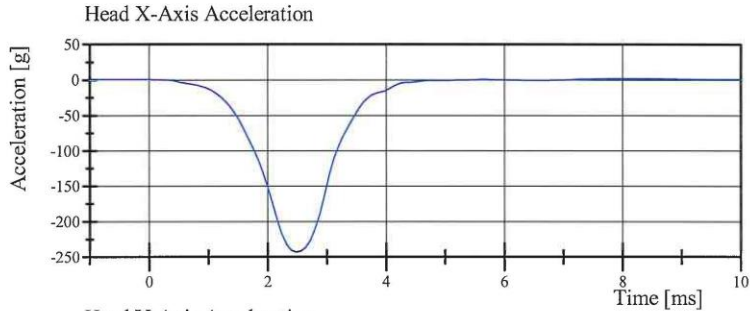


# Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 426 Certification No. 32-1

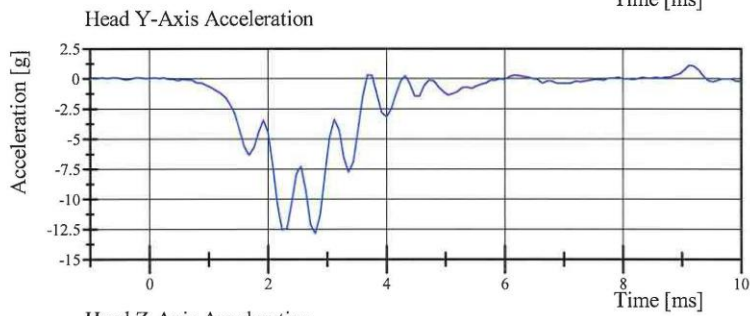
Test Date: 10/30/2015



Filter Class: CFC\_1000

Max: 1.8 g at 8.1 ms

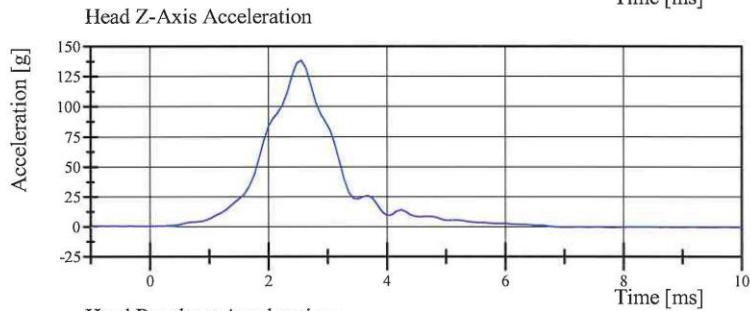
Min: -243.9 g at 2.5 ms



Filter Class: CFC\_1000

Max: 1.1 g at 9.1 ms

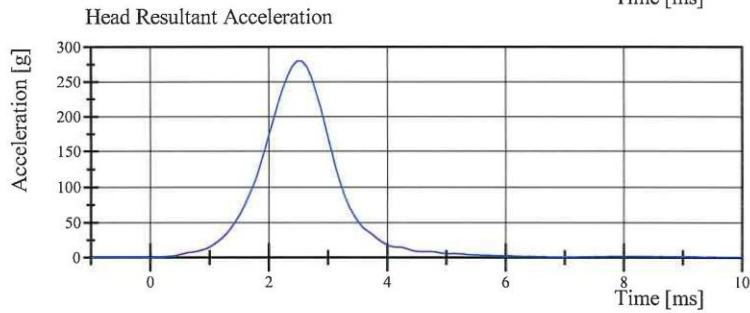
Min: -12.9 g at 2.8 ms



Filter Class: CFC\_1000

Max: 138.3 g at 2.6 ms

Min: -0.8 g at 7.8 ms



Filter Class: CFC\_1000

Max: 279.3 g at 2.5 ms

Min: 0.0 g at -1.0 ms

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

10.30.2015 15:35:36 608



# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 32-4

Test Date: 11/2/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.111 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.21 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.37 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.14 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-78.2 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	74.8 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	87.6 ms	Yes

**Test meets specifications.**

**Comments:**

Technician

Melissa Schinke

Approved

[Signature]

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

11.02.2015 10:48:28 1708

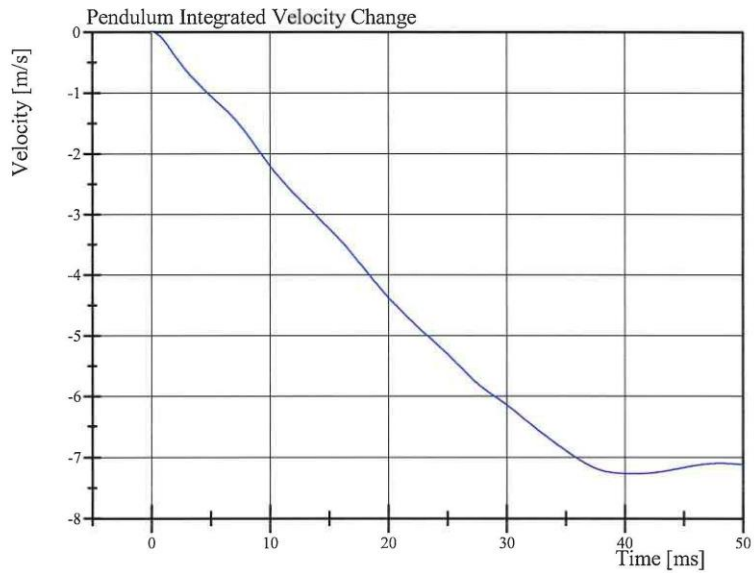
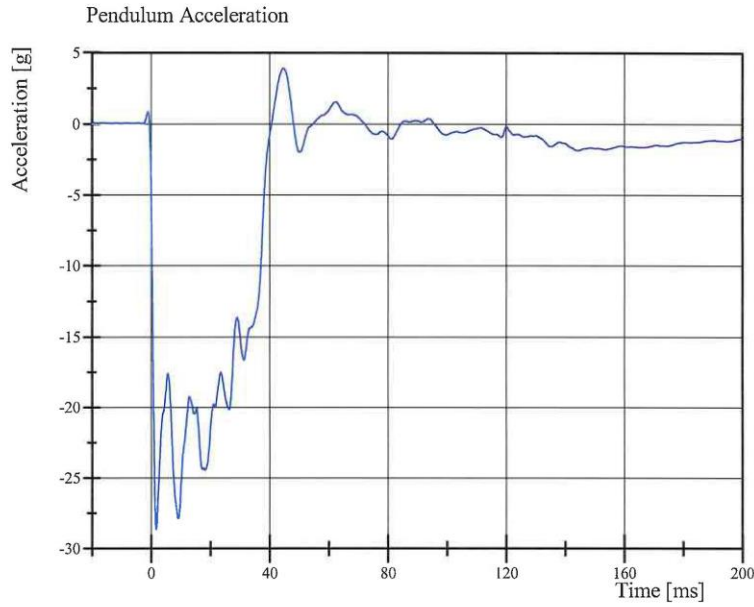


# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 32-4

Test Date: 11/2/2015



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

11.02.2015 10:48:50 1708



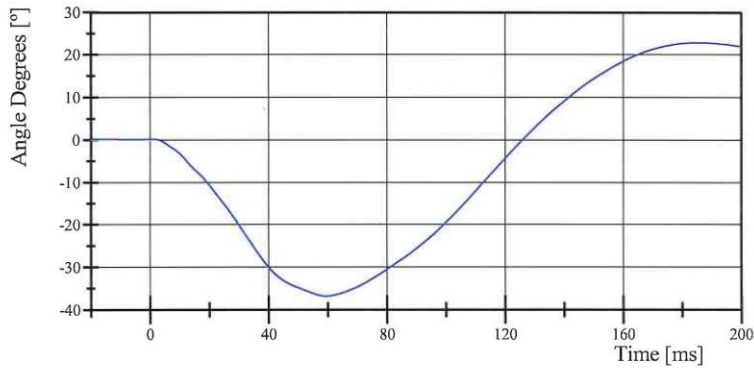
# Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 32-4

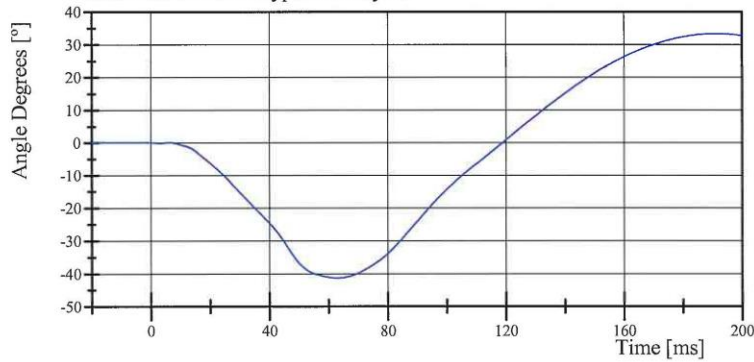
Test Date: 11/2/2015

Pot Rotation at the Base of Neck



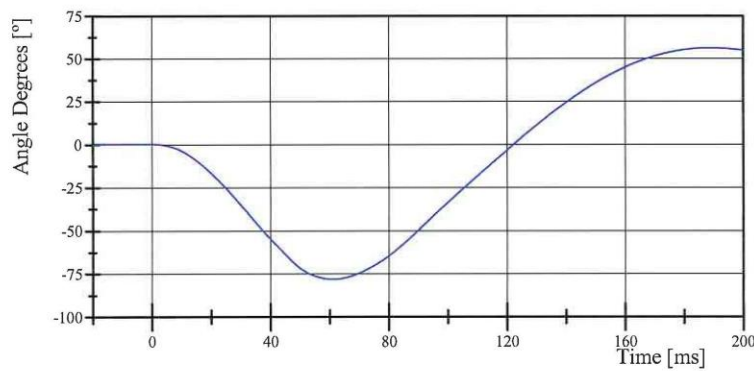
Filter Class: CFC\_60  
Max: 22.9 ° at 185.7 ms  
Min: -36.9 ° at 59.4 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 33.3 ° at 191.3 ms  
Min: -41.4 ° at 62.9 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 56.1 ° at 188.4 ms  
Min: -78.2 ° at 61.1 ms

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

11.02.2015 10:48:50 1708

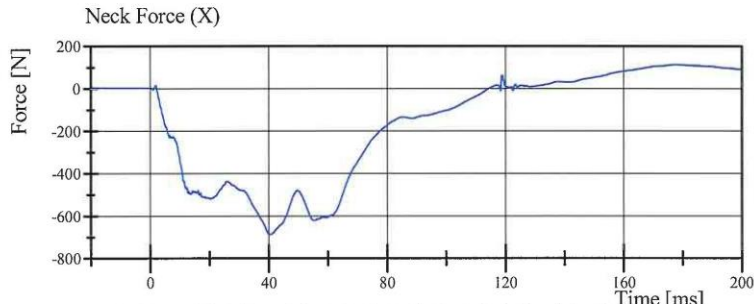


# Transportation Research Center Inc.

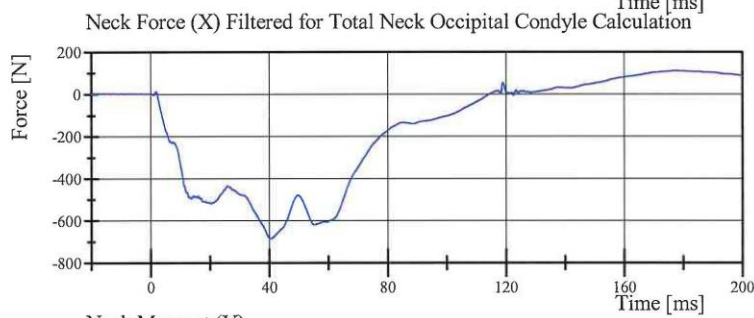
Neck Flexion

HIII 5th Serial No. 426 Certification No. 32-4

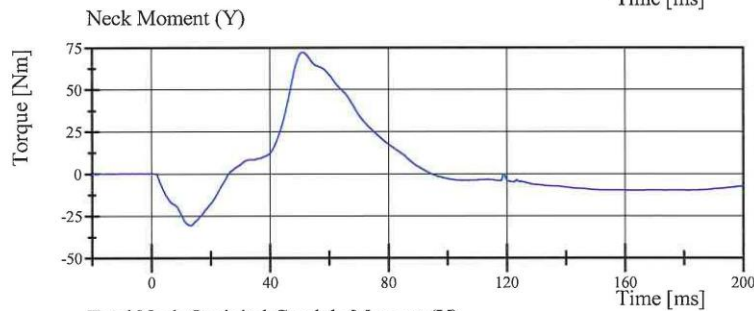
Test Date: 11/2/2015



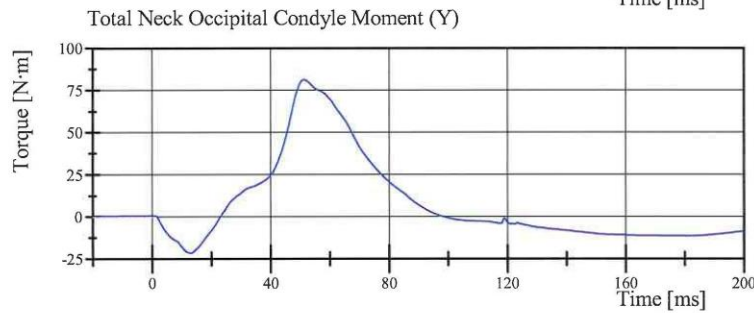
Filter Class: CFC\_1000  
Max: 112.6 N at 177.3 ms  
Min: -689.3 N at 40.4 ms



Filter Class: CFC\_600  
Max: 112.2 N at 177.6 ms  
Min: -688.4 N at 40.4 ms



Filter Class: CFC\_600  
Max: 72.1 Nm at 51.1 ms  
Min: -30.6 Nm at 13.0 ms



Filter Class: Without\_(Consta  
Max: 81.1 N·m at 51.3 ms  
Min: -21.9 N·m at 13.0 ms

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

11.02.2015 10:48:51 1708



# Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 426 Certification No. 32-1

Test Date: 11/2/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.139 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	3.74 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.47 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	104.8 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N-m	-59.9 N-m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N-m	94 - 114 ms	102.4 ms	Yes

**Test meets specifications.**

**Comments:**

Technician

Melissa Schinzel

Approved

[Signature]

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

11.02.2015 11:33:13 1823

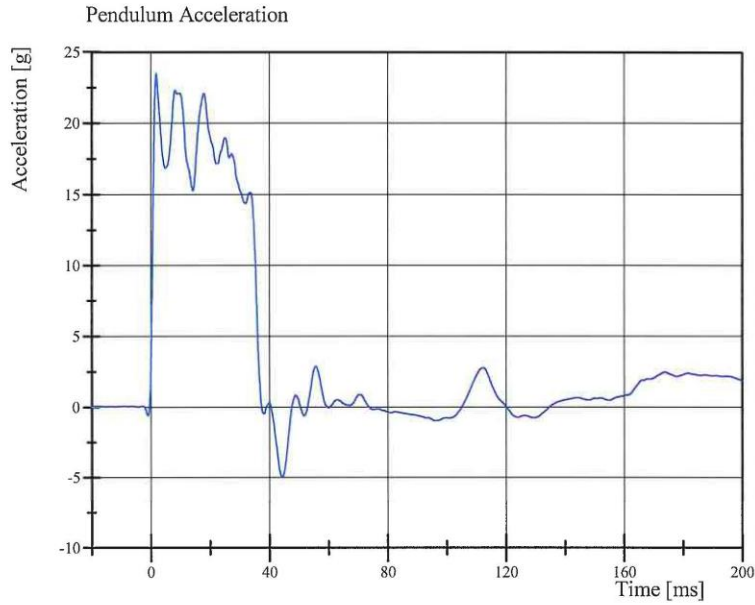


# Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 426 Certification No. 32-1

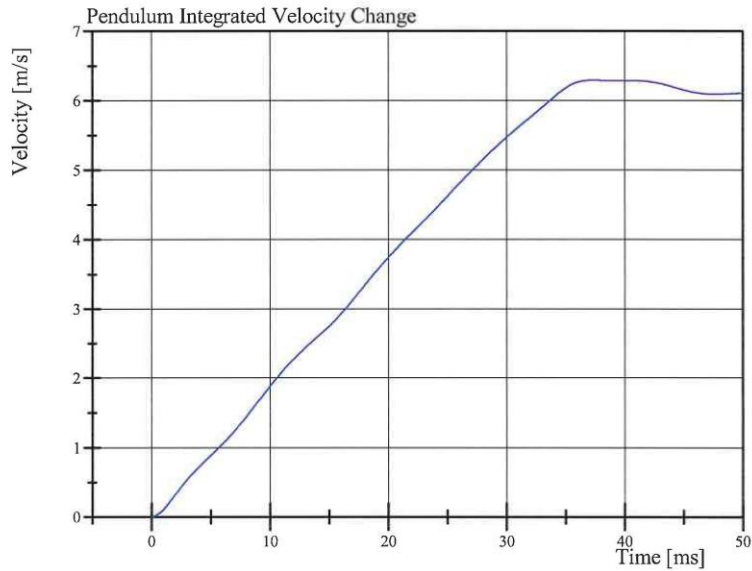
Test Date: 11/2/2015



Filter Class: CFC\_180

Max: 23.5 g at 1.8 ms

Min: -5.1 g at 44.4 ms



Filter Class: CFC\_180

Max: 6.3 m/s at 37.3 ms

Min: 0.0 m/s at 0.0 ms

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

11.02.2015 11:33:20 1823



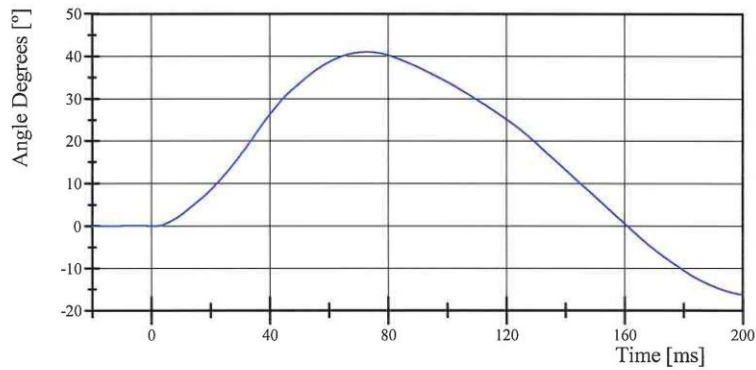
# Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 426 Certification No. 32-1

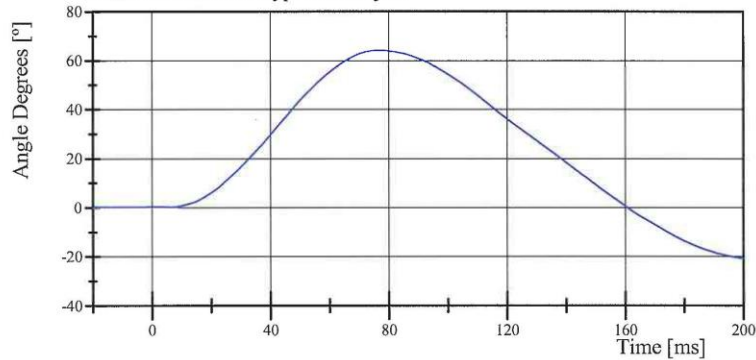
Test Date: 11/2/2015

Pot Rotation at the Base of Neck



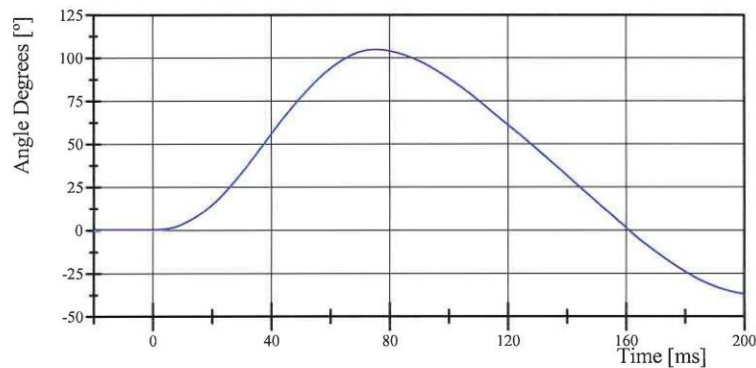
Filter Class: CFC\_60  
Max: 40.9 ° at 72.8 ms  
Min: -16.2 ° at 200.0 ms

Head Rotation at Occipital Condyles



Filter Class: CFC\_60  
Max: 64.0 ° at 76.7 ms  
Min: -20.8 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC\_60  
Max: 104.8 ° at 75.3 ms  
Min: -37.0 ° at 200.0 ms

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

11.02.2015 11:33:21 1823

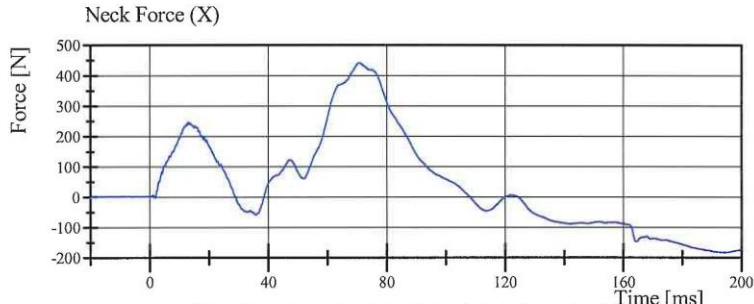


# Transportation Research Center Inc.

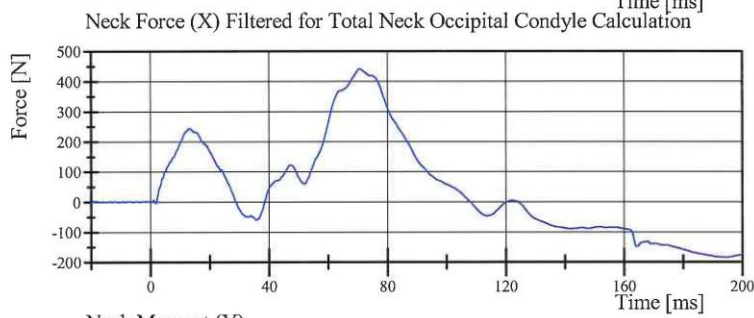
Neck Extension

HIII 5th Serial No. 426 Certification No. 32-1

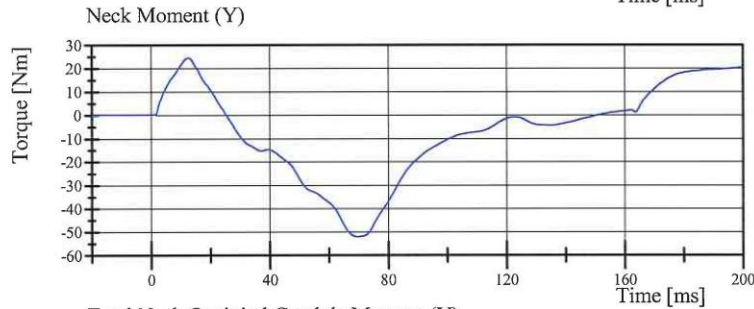
Test Date: 11/2/2015



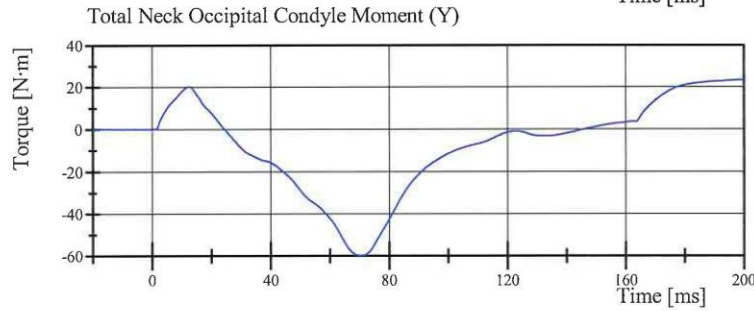
Filter Class: CFC\_1000  
Max: 441.2 N at 70.6 ms  
Min: -184.0 N at 193.7 ms



Filter Class: CFC\_600  
Max: 441.0 N at 70.7 ms  
Min: -183.6 N at 193.7 ms



Filter Class: CFC\_600  
Max: 24.3 Nm at 12.7 ms  
Min: -52.2 Nm at 69.5 ms



Filter Class: Without (Consta  
Max: 23.5 N·m at 199.5 ms  
Min: -59.9 N·m at 70.3 ms

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

11.02.2015 11:33:22 1823



# Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 426 Certification No. 32-3

Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.754 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,300.5 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	$\geq$ (-4,600) N	-4,300.5 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-52.0 mm	Yes
Internal Hysteresis	69 - 85 %	71.2 %	Yes

**Test meets specifications.**

**Comments:**

Technician

Melissa Schinker

Approved

[Signature]

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

10.30.2015 14:20:34 412

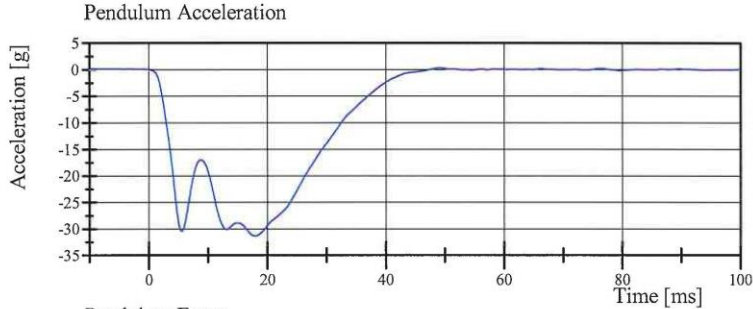


# Transportation Research Center Inc.

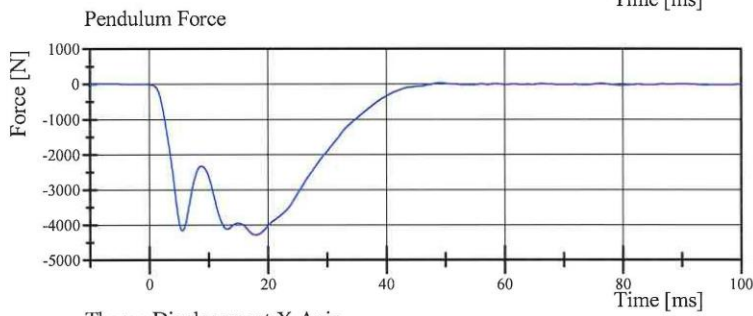
Front Thorax

HIII 5th Serial No. 426 Certification No. 32-3

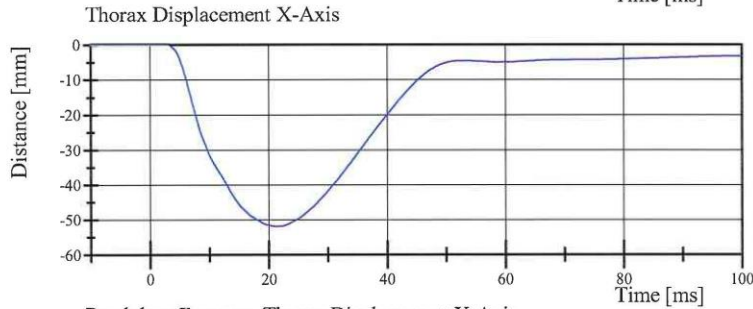
Test Date: 10/30/2015



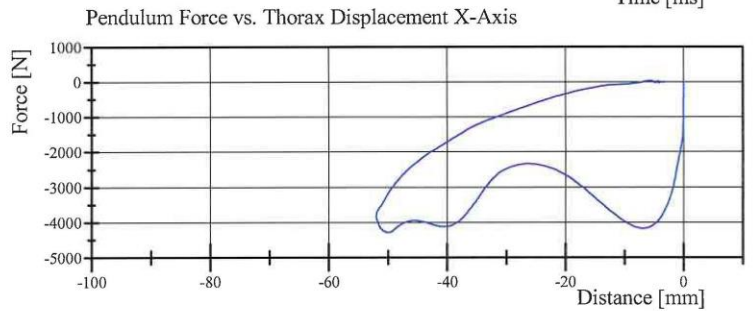
Filter Class: CFC\_180  
Max: 0.3 g at 49.1 ms  
Min: -31.4 g at 17.8 ms



Filter Class: CFC\_180  
Max: 36.1 N at 49.1 ms  
Min: -4,300.5 N at 17.8 ms



Filter Class: CFC\_600  
Max: 0.0 mm at -5.1 ms  
Min: -52.0 mm at 21.3 ms



Filter Class: CFC\_180  
Max: 36.1 N at -5.7 mm  
Min: -4,300.5 N at -49.9 mm

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

10.30.2015 14:20:49 412



## Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 32-1  
Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.101 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,942.7 N	Yes

**Test meets specifications.**

**Comments:**

Technician

Melissa Schinker

Approved

[Signature]

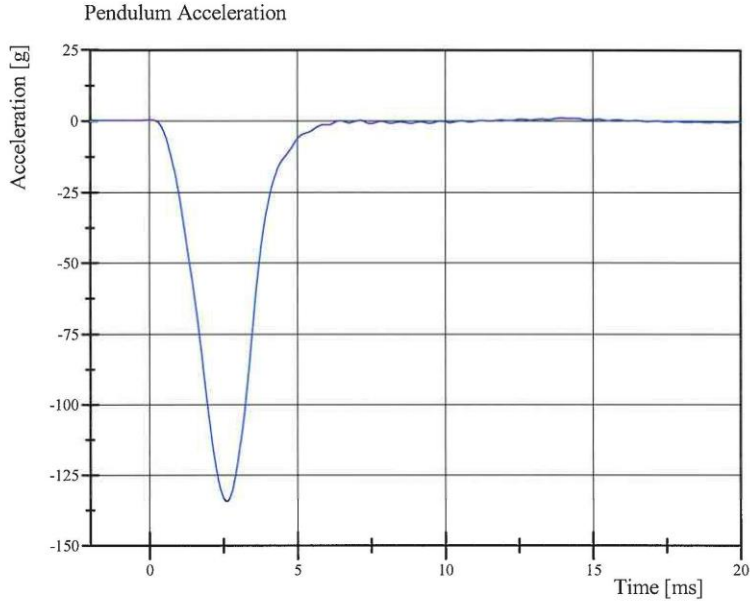
Specification Source: CFR49 Part 572 Subpart O  
with Polarity in accordance with J211

10.30.2015 14:58:06 1766

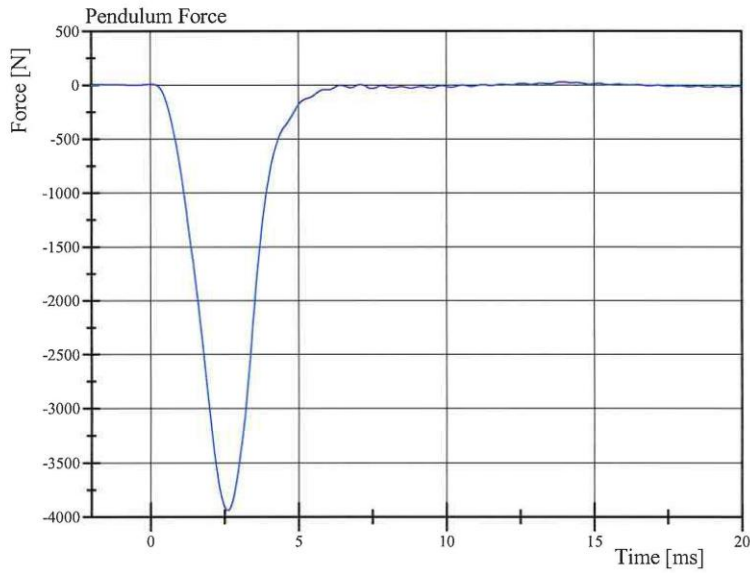


# Transportation Research Center Inc.

Left Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 32-1  
Test Date: 10/30/2015



Filter Class: CFC\_600  
Max: 1.0 g at 13.9 ms  
Min: -134.5 g at 2.6 ms



Filter Class: CFC\_600  
Max: 29.6 N at 13.9 ms  
Min: -3,942.7 N at 2.6 ms

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

10.30.2015 14:58:13 1766



# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 32-1  
Test Date: 10/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.086 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,745.3 N	Yes

Test meets specifications.

Comments:

Technician

Melissa Schimber

Approved

[Signature]

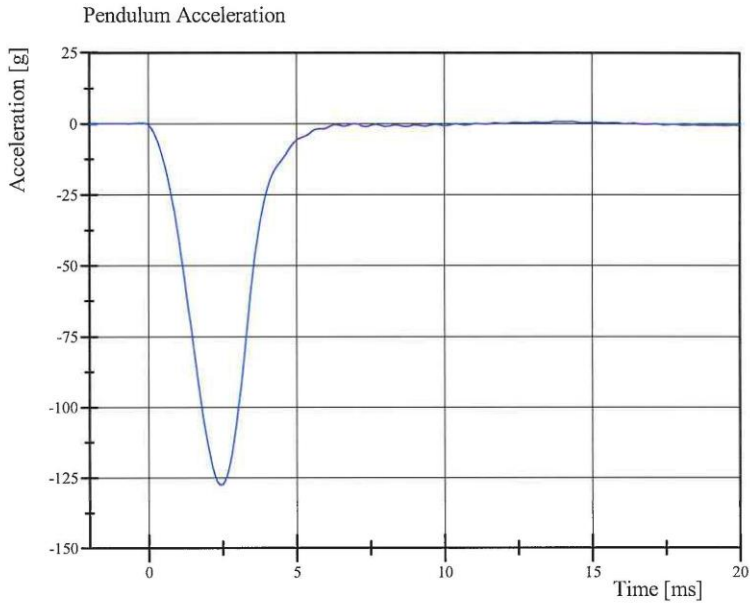
Specification Source: CFR49 Part 572, Subpart O  
with Polarity in accordance with J211

10.30.2015 15:04:46 1777

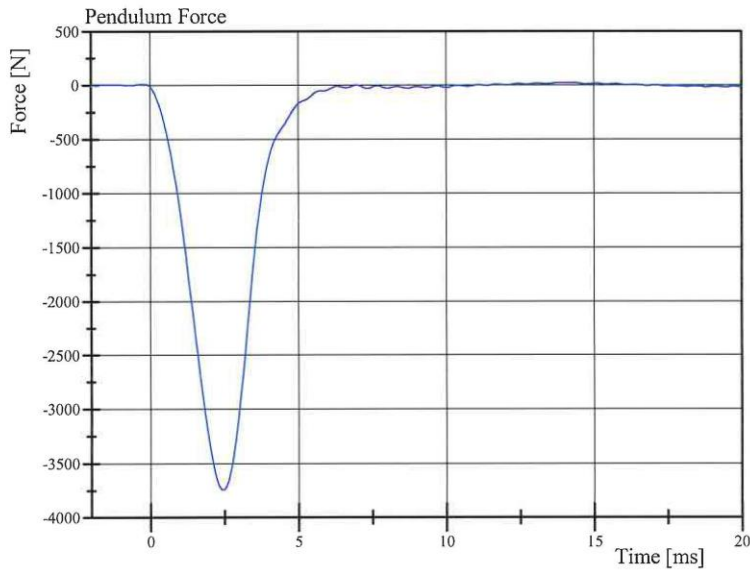


# Transportation Research Center Inc.

Right Knee Femur Response Test  
HIII 5th Serial No. 426 Certification No. 32-1  
Test Date: 10/30/2015



Filter Class: CFC\_600  
Max: 0.8 g at 14.3 ms  
Min: -127.7 g at 2.5 ms



Filter Class: CFC\_600  
Max: 23.7 N at 14.3 ms  
Min: -3,745.3 N at 2.5 ms

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

10.30.2015 15:04:53 1777



# Transportation Research Center Inc.

Hybrid III Small Female Torso Flexion



Serial Number: 426

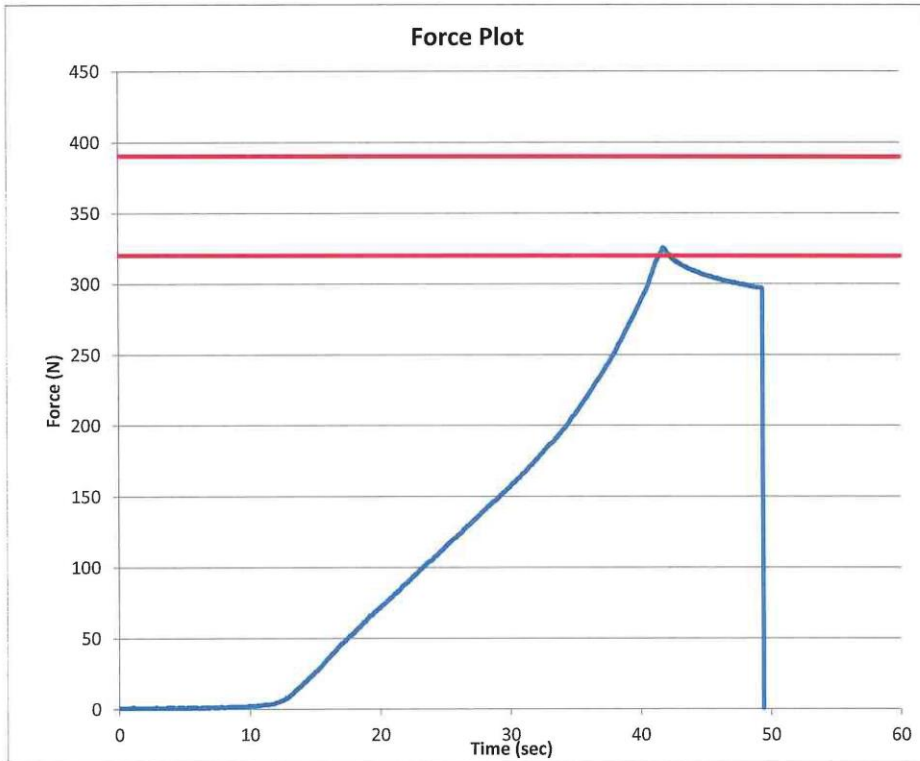
Date: 11/3/2015

Test Number: 1

Time: 8:34

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.8 °C Pass
Humidity	10 - 70	37 % Pass
Average Angular Velocity	0.5 - 1.5	0.93 deg/sec Pass
Initial Angle	0 - 20	17.37 deg Pass
Peak Force at 45.21°	320 - 390	325.53 N Pass
Final Angle	-8 - 8	4.64 deg Pass



Technician

Melissa Schenker

Approved

[Signature]