

**REPORT NUMBER: NCAP-KAR-15-022**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
FRONTAL BARRIER IMPACT TEST**

**FORD MOTOR CO.  
2015 FORD MUSTANG 2-DOOR COUPE**

**NHTSA NUMBER: M20150219**

**PREPARED BY:  
KARCO ENGINEERING, LLC.  
9270 HOLLY ROAD  
ADELANTO, CA 92301**



**JANUARY 20, 2015**

**FINAL REPORT**

**U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
SAFETY PERFORMANCE STANDARDS  
OFFICE OF CRASHWORTHINESS STANDARDS  
1200 NEW JERSEY AVE, SE  
ROOM W43-410  
WASHINGTON, DC 20590**



## TECHNICAL REPORT DOCUMENTATION PAGE

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		<b>15. Supplementary Notes</b>																																																					
<b>16. Abstract</b> A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2015 Ford Mustang 2-door coupe in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicative of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on January 6, 2015.  The impact velocity of the vehicle was 55.99 km/h and the ambient temperature at the barrier face at the time of impact was 18.9° C. The target vehicle's post-test maximum crush was 594 mm at the vehicle's centerline. The test vehicle's performance is as follows:																																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD</th> <th colspan="2">Passenger ATD</th> </tr> <tr> <th>Threshold</th> <th>Result</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>15</sub>)</td> <td>N/A</td> <td>700.0</td> <td>138.4</td> <td>700.0</td> <td>120.8</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>-13</td> <td>52</td> <td>-10</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>0.19</td> <td>1</td> <td>0.48</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>585.2</td> <td>2620</td> <td>990.5</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>-257.7</td> <td>2520</td> <td>-336.1</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>-1065.8</td> <td>6805</td> <td>-232.7</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>-2602.9</td> <td>6805</td> <td>-253.8</td> </tr> </tbody> </table>				Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC <sub>15</sub> )	N/A	700.0	138.4	700.0	120.8	Maximum Chest Compression	mm	63	-13	52	-10	Nij	N/A	1	0.19	1	0.48	Neck Tension	N	4170	585.2	2620	990.5	Neck Compression	N	4000	-257.7	2520	-336.1	Left Femur Force	N	10008	-1065.8	6805	-232.7	Right Femur Force	N	10008	-2602.9	6805	-253.8
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<b>17. Key Words</b> 35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP)		<b>18. Distribution Statement</b> Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave., SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																																																					
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## TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	Purpose and Summary of the Test	1
2	Occupant and Vehicle Information / Data Sheets	3
<u>Data Sheet No.</u>		<u>Page No.</u>
1	General Test and Vehicle Parameter Data	4
2	Seat Adjustment, Fuel System, and Steering Wheel Data	8
3	Dummy Longitudinal Clearance Dimensions	10
4	Dummy Lateral Clearance Dimensions	11
5	Seat Belt Positioning Data	12
6	High-Speed Camera Locations and Data	13
7	Vehicle Accelerometer Locations	15
8	Photographic Reference Target Locations	16
9	Load Cell Locations on Fixed Barrier	17
10	Test Vehicle Camera and Instrumentation Summary	18
11	Post-Test Observations	19
12	Vehicle Profile Measurements	20
13	Accident Investigation Division Data	22
14	Vehicle Intrusion Measurements	23
15	Summary of FMVSS 212, 219 (Partial), and FMVSS 301 Data	25
16	FMVSS 301 Static Rollover Results	27
17	Dummy / Vehicle Temperature Stabilization	28
<u>Appendix</u>		<u>Page No.</u>
A	Photographs	A
B	Dummy Response Data Traces	B
C	Dummy Calibration and Performance Verification Data	C

## **SECTION 1**

### **PURPOSE AND SUMMARY OF TEST**

#### **PURPOSE**

This 56.3 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 number DTNH22-12-D-00259. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure, dated August 2013.

#### **SUMMARY**

A load cell barrier consisting of 176 load cells was impacted by a 2015 Ford Mustang 2-door MPV at a velocity of 55.99 km/h. The test was performed at KARCO Engineering, LLC. on January 6, 2015. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

Three (3) real-time cameras and sixteen (16) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet 6 of 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 seating 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 force transducers, right / left femur load cells, and lower leg instrumentation. Seat belt load cells were placed on the driver's and passenger's shoulder and lap belts to measure the dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 360) and the right-front passenger (position 2) ATD (Serial No. 141) were calibrated prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 112 channels of dummy and vehicle response data were recorded on an on-board data acquisition system. Appendix B contains the dummy response data traces.

There was 100% windshield retention and no intrusion into the protected zone of the windshield during the event.

The maximum static crush of the test vehicle was 594 mm located at the vehicle's centerline. 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: The driver ATD's head contacted the airbag and headrest. The upper torso contacted the airbag. Both the left and right knees contacted the knee airbag.

The passenger's visible contact points were as follows: The passenger ATD's head contacted the airbag and headrest. The upper torso contacted the airbag.

The occupant data is summarized below:

ATD Position	HIC <sub>15</sub>	T <sup>1</sup>	T <sup>2</sup>	Chest Disp. (mm)	Nij	Neck Tension (N)	Neck Comp. (N)	Left Femur (N)	Right Femur (N)
Driver (50th)	138.4	61.8	76.8	-13	0.19	585.2	-257.7	-1065.8	-2602.9
Passenger (5th)	120.8	48.8	63.8	-10	0.48	990.5	-336.1	-232.7	-253.8

## SECTION 2

### OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

#### CONVERSION FACTORS

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.574
Pressure	Tire Pressures	lbf/in <sup>2</sup>	kPa	6.895
Temperature	General Use	°F	°C	$=(T_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf-ft	N•m	1.355

**DATA SHEET NO. 1**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA Number	M20150219
Model Year	2015
Make	Ford
Model	Mustang
Body Style	2-Door Coupe
VIN	1FA6P8AMXF5309966
Body Color	Competition Orange
Odometer Reading (km / mi)	95 / 59
Engine Displacement (L)	3.7
Type / No. of Cylinders	V6
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	Rear
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

Traction Control System	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	Yes
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 Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Front Pass. Seat Belt Pretensioner	Yes
Front Pass. Load Limiter	Yes
Front Pass. Active Glovebox	Yes

Does Owner's Manual provide instructions to turn off automatic door locks? Yes

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Ford Motor Co.
Date of Manufacture	Oct-14

GVWR (kg)	2032
GAWR Front (kg)	982
GAWR Rear (kg)	1055

**VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION**

Measured Parameter	Front	Rear	Third	Total	
Type of Seats	Bucket	Bench			
Designated Seating Capacity	2	2		4	
Capacity Weight (VCW) (kg)				303.0	A
DSC x 68.04 (kg)				272.2	B
Cargo Weight (RCLW) (kg)				30.8	A-B

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

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15



### VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	220	220
Recommended Tire Size	P235/55R17	P235/55R17
Tire Size on Vehicle	P235/55R17	P235/55R17
Tire Manufacturer	Hankook	Hankook
Tire Model	Ventus S1 Noble 2	Ventus S1 Noble 2
Treadwear	700	700
Traction	B	B
Temperature Grades	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Steel, 2 Polyester, 2 Nylon	2 Steel, 2 Polyester, 2 Nylon
Load Index / Speed Symbol	99H	99H
Tire Material	Steel, Polyester, Nylon	Steel, Polyester, Nylon
DOT Safety Code Left	T73F 1AH 2114	T73F 1AH 2114
DOT Safety Code Right	T73F 1AH 2114	T73F 1AH 2114

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

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	417.0	365.0		438.0	436.5	
Right	kg	446.5	371.5		457.0	432.5	
Ratio	%	54.0%	46.0%	100.0%	50.7%	49.3%	100.0%
Total	kg	863.5	736.5	1600.0	895.0	869.0	1764.0

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1600.0	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	30.8	C
Calculated Vehicle Target Weight (TVTW)	kg	1771.8	A+B+C

**TEST VEHICLE ATTITUDES**

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	725	725	722	723	1253
As Tested	mm	712	719	704	709	1341
Post-Test	mm	738	790	704	711	

**GENERAL TEST VEHICLE DATA**

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2722
Total Vehicle Length at Left Side	mm	4045
Total Vehicle Length at Centerline	mm	4790
Total Vehicle Length at Right Side	mm	4050
Weight of Ballast in Cargo Area	kg	74.5
Weight of Vehicle Components Removed	kg	29.5
Amount of Stoddard Solvent in Fuel Tank	L	56.32

**VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:**

Rear bumper fascia (7.5 kg), taillights (3.5 kg), rear bumper beam (7.5 kg), trunk trim (2.0 kg), rear seat cushion (9.0 kg)

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

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**TARGET VEHICLE STRUCTURAL MEASUREMENTS**

No.	Description	Pre-Test
1	Total Length	4790
2	Total Width	1915
3	Bumper Top Height	585
4	Bumper Bottom Height	454
5	Longitudinal Member Top Height	530
6	Distance Between Longitudinal Members	810
7	Longitudinal Member Width	90
8	Engine Top Height	830
9	Engine Bottom Height	168
10	Engine and Gearbox Width	630
11	Front Bumper to Engine Distance	824
12	Front Shock Absorber Fixing Height	868
13	Bonnet Leading Edge Height	788
14	Front Shock Absorber Fixing Width	1127
15	Front Bumper to Front Axle Distance	944
16	Front Axle to A-Pillar Distance	720
17	A-Pillar to B-Pillar Distance	1216
18	B-Pillar to Rear Axle Distance	753
19	B-Pillar to C-Pillar Distance	530
20	Roof Sill Bottom Height	1207
21	Roof Sill Top Height	1315
22	Floor Sill Bottom Height	246
23	Floor Sill Top Height	310

All measurements in millimeters.

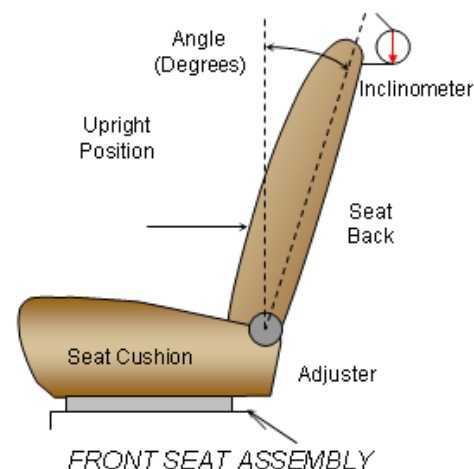
## DATA SHEET NO. 2

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

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

#### NOMINAL DESIGN RIDING POSITION

The procedure for the driver is as follows: the seat back is set to the manufacturer's designated angle. The procedure for the passenger is as follows: the seat back is set to position the transverse instrumentation platform of the dummy's head at  $0^\circ \pm 0.5^\circ$ . Seat back angle is measured at the head rest post.

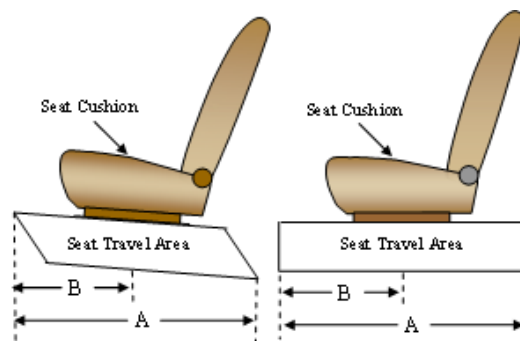


#### SEAT BACK ANGLE

Seating Position	Degrees
Driver Seat Back Angle	3.9
Passenger Seat Back Angle	1.1

#### SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rear most possible position. The driver's seat is set to the middle of the fore-aft travel. The passenger's seat is set to the forward most position where the ATD will not contact any interior panels.



#### SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position
Driver Seat	310 mm	158 mm
Passenger Seat	248 mm	0 mm

#### SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position for a 50<sup>th</sup> percentile adult male ATD for the driver, and a 5<sup>th</sup> percentile adult female ATD for the passenger. Position "H" is the uppermost position, followed by position "M1". Position "L" is the lowermost position.

#### SEAT BELT UPPER ANCHORAGES

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

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

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

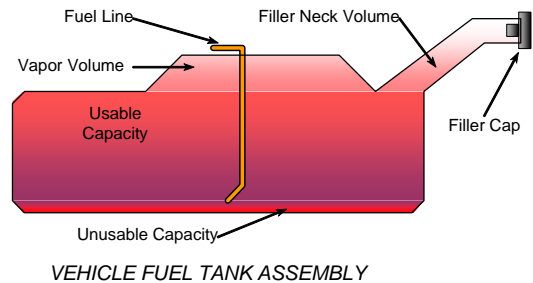
Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**FUEL TANK CAPACITY**

Description	Liters
Usable Capacity of "Standard Tank"	60.56
Usable Capacity of "Optional Tank"	
92 - 94% of Usable Capacity	55.72 to 56.93
Actual Amount of Stoddard Solvent Used	56.32
1/3 of Usable Capacity	20.19

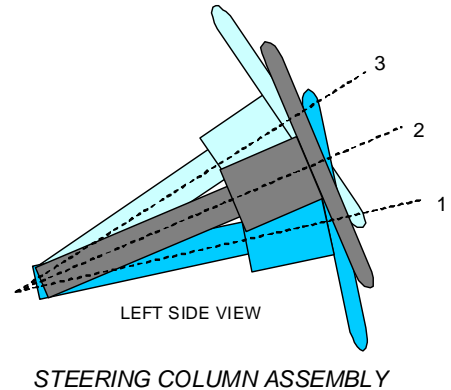
**FUEL PUMP**

The vehicle is equipped with an electric fuel pump.  
 The fuel pump operates when the ignition is switched to the "ON" position.



**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. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements. A tape measure is used to measure telescoping steering wheel travel.



**STEERING COLUMN POSITIONING**

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	22.0	80
Geometric Center Position, No. 2	19.7	100
Uppermost Position, No. 3	17.3	120
Telescoping Steering Wheel Travel		40
Test Position	19.7	100

### DATA SHEET NO. 3

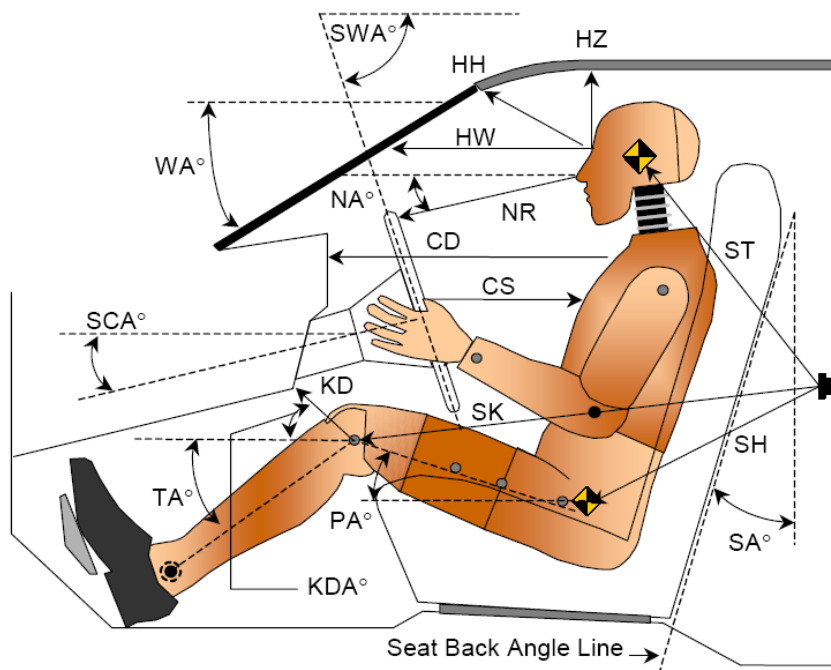
### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Ford Mustang 2-Door Coupe

NHTSA No.: M20150219

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 01/06/15



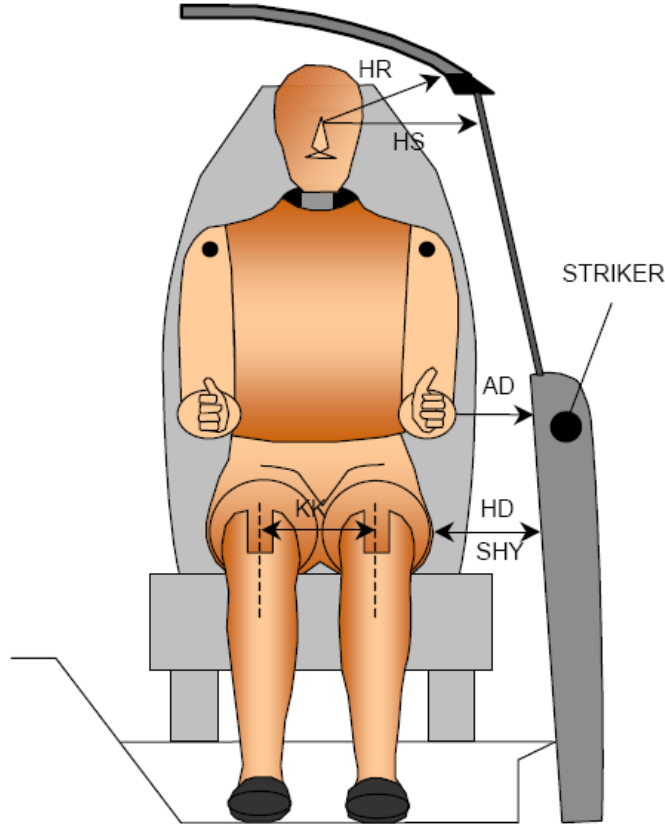
**LEFT SIDE VIEW**

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		22.9		
SWA°	Steering Wheel Angle		71.4		
SCA°	Steering Column Angle		19.6		
SA°	Seat Back Angle (On Headrest Post)		3.9		1.1
HZ	Head to Roof	195	90.0	210	90.0
HH	Head to Header	332	25.6	292	49.9
HW	Head to Windshield	558	0.0	630	0.0
NR	Nose to Rim	348	7.6	407	4.0
CD	Chest to Dash	540	10.0	417	4.7
CS	Chest to Steering Hub	296	0.0		
RA	Rim to Abdomen	192	0.0		
KDL	Left Knee to Dash	245	35.5	145	37.0
KDR	Right Knee to Dash	225	32.3	159	37.4
PA°	Pelvic Angle		24.7		22.1
TA°	Tibia Angle		31.5		39.5
SK	Striker to Knee	821	7.6	913	4.0
ST	Striker to Head	552	52.0	573	34.8
SH	Striker to H-Point	519	64.2	645	69.8

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

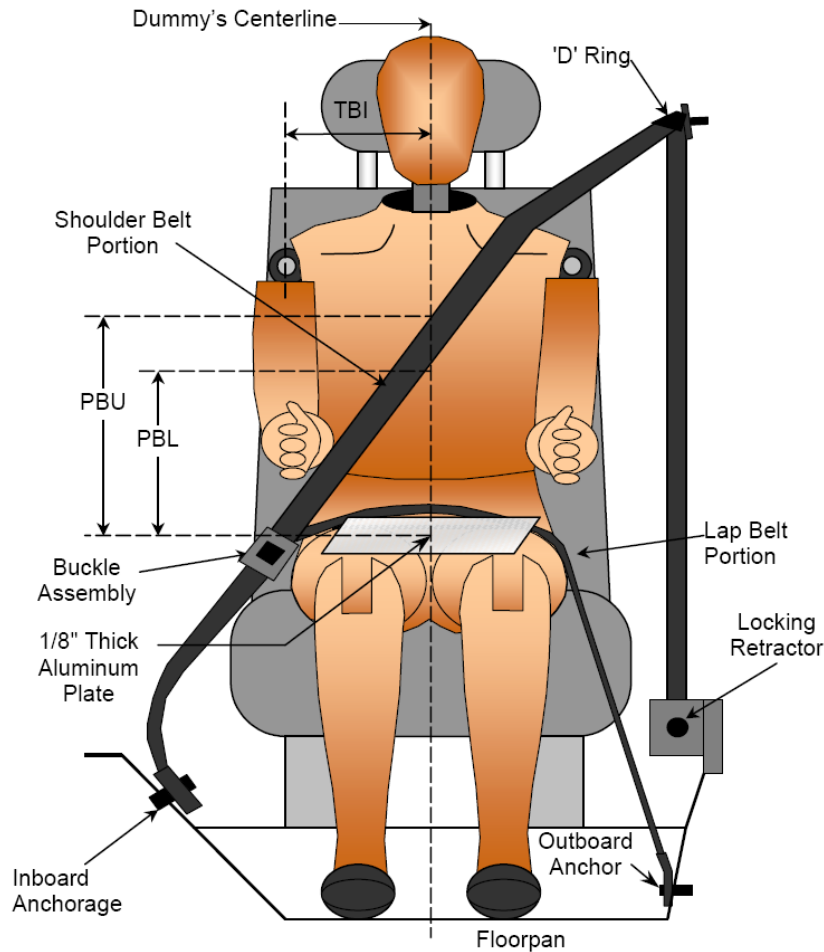


Code	Description	Driver (mm)	Passenger (mm)
AD	Arm to Door	133	90
HD	H-Point to Door	150	181
HR	Head to Side Header	214	267
HS	Head to Side Window	340	387
KK	Knee to Knee	325	220
SHY	Striker to H-Point (Y-Direction)	255	267
AA	Ankle to Ankle	320	160

**DATA SHEET NO. 5**  
**SEAT BELT POSITIONING DATA**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: M20150219  
 Test Date: 01/06/15



**FRONT VIEW OF DUMMY**

**SEAT BELT POSITIONING MEASUREMENTS**

Code	Measurement Description	Units	Driver	Passenger
PBU	Top Surface of Aluminum Plate to Belt Upper Edge	mm	343	290
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	260	200

**BELT LENGTH DATA**

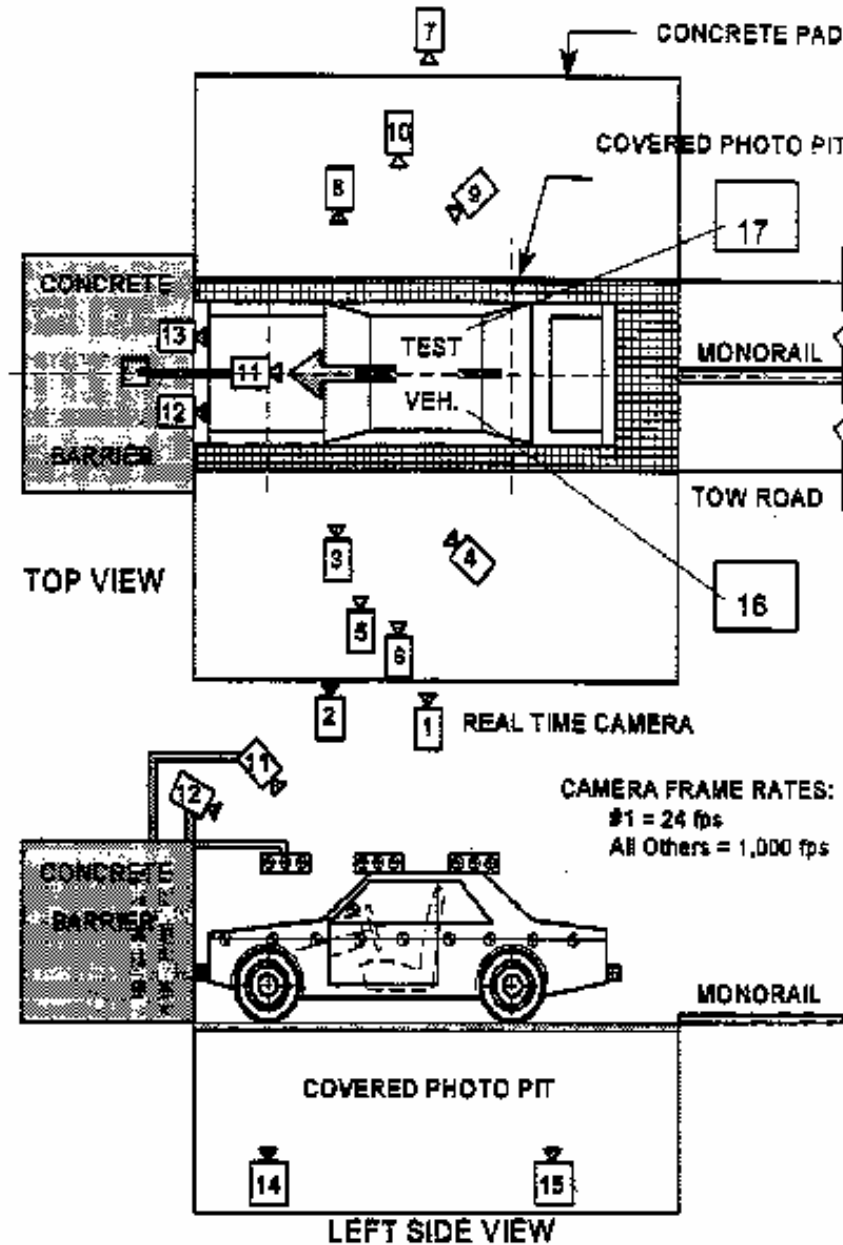
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	1018	1070
Lap Belt Length as Measured on ATD	mm	631	664
Remainder of Belt on Reel	mm	956	881
Total Belt Length for Continuous Webbing Systems	mm	2605	2615

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

CAMERA POSITIONS FOR FRONTAL IMPACTS



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

**HIGH-SPEED CAMERA LOCATIONS AND DATA**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**CAMERA LOCATIONS**

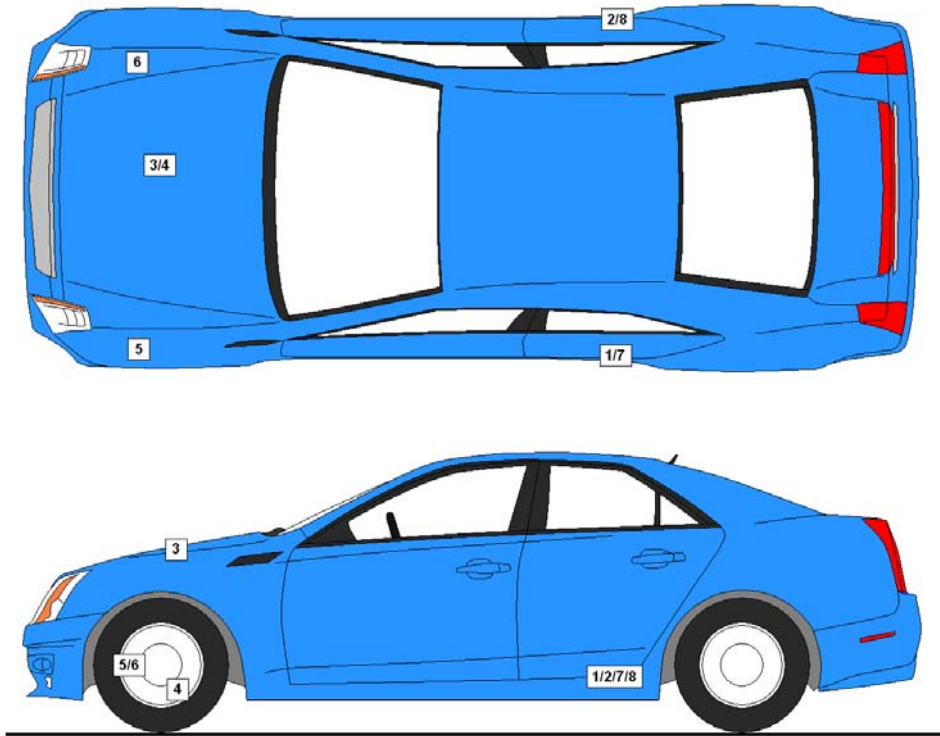
No.	Description	Location (mm)			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-11412	-8150	-1484		30
2	Driver Close-Up	-2590	-7950	-1371	24	1000
3	Left Front Half	-1701	-6197	-1701	50	1000
4	Left Angle	-6696	-10308	-3211	ZOOM	1000
5	Steering Column - Top	-1966	-10412	-3688	50	1000
6	Steering Column - Bottom	-1972	-10412	-3379	50	1000
7	Right Overall	-2336	7569	-1012	24	1000
8	Passenger Close-Up	-1733	7581	-1408	50	1000
9	Right Front Half	-1600	8214	-1811	ZOOM	1000
10	Right Angle	-6217	9516	-4830	ZOOM	1000
11	Windshield	-354	0	-5749	12	1000
12	Driver Windshield	297	-366	-2460	12	1000
13	Passenger Windshield	297	366	-2460	24	1000
14	Pit Front	-756	0	1495	20	1000
15	Pit Rear	-3398	0	1495	20	1000
16	Onboard Driver Airbag (Optional)	-3160	-250	-1180	13	1000
17	Onboard Passenger Airbag (Optional)	-3160	250	-1180	13	1000
18	Real-Time Left View of Impact					
19	Real-Time Right View of Impact					

Coordinates:      +X = forward impact plane  
                          +Y = right of monorail center  
                          +Z = into ground

**DATA SHEET NO. 7**

**VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15



**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

No.	Description	Location		
		X	Y	Z
1	Left Rear Accelerometer X-Direction	2120	-680	336
2	Right Rear Accelerometer X-Direction	2120	680	336
3	Engine Top X	3716	117	920
4	Engine Bottom X	3580	0	220
5	Left Rear Accelerometer Z-Direction	2120	-680	336
6	Right Rear Accelerometer Z-Direction	2120	680	336
7	Left Rear Accelerometer X-Direction Redundant	2095	-680	336
8	Right Rear Accelerometer X-Direction Redundant	2095	680	336

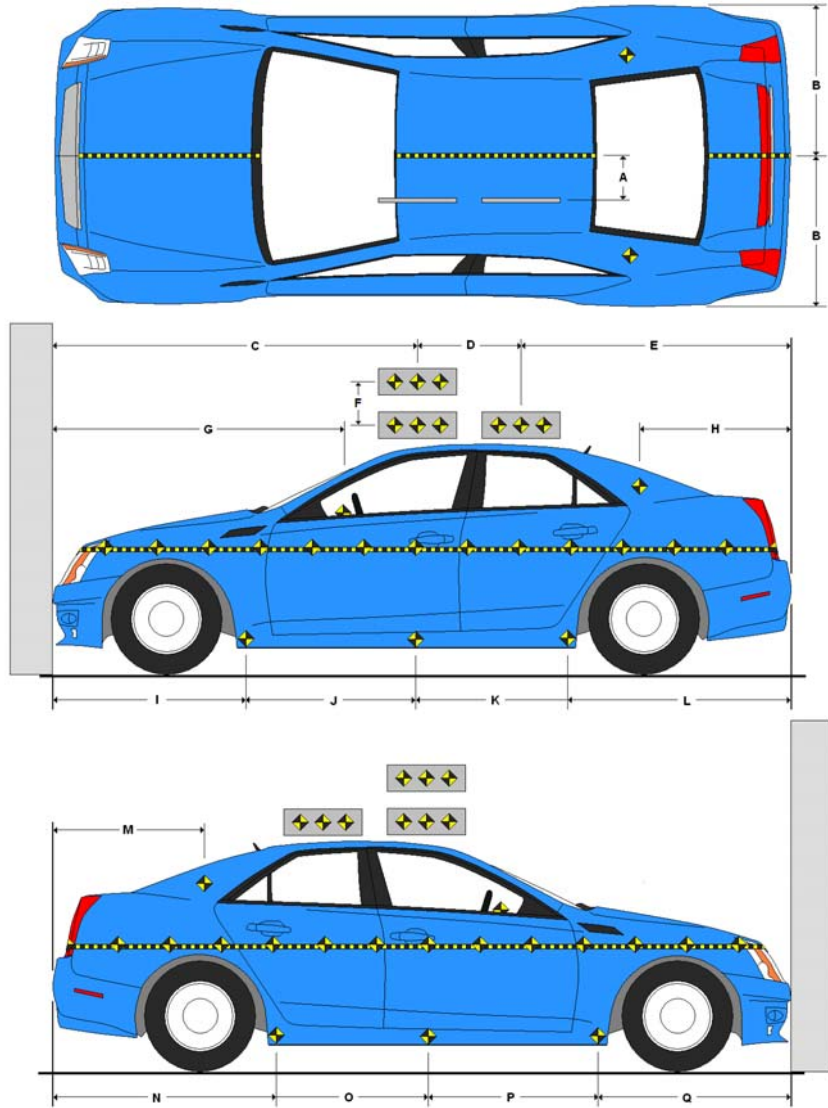
Reference Points: X – Rear Surface of Vehicle (+ forward)  
 Y – Vehicle Centerline (+ to right)  
 Z – Ground Plane (+ down)

**DATA SHEET NO. 8**

**PHOTOGRAPHIC REFERENCE TARGET LOCATIONS**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

Item	Value
A	380
B	958
C	2280
D	610
E	1902
F	305
G	2005
H	1078
I	1398
J	898
K	898
L	1597
M	1069
N	1597
O	898
P	898
Q	1398



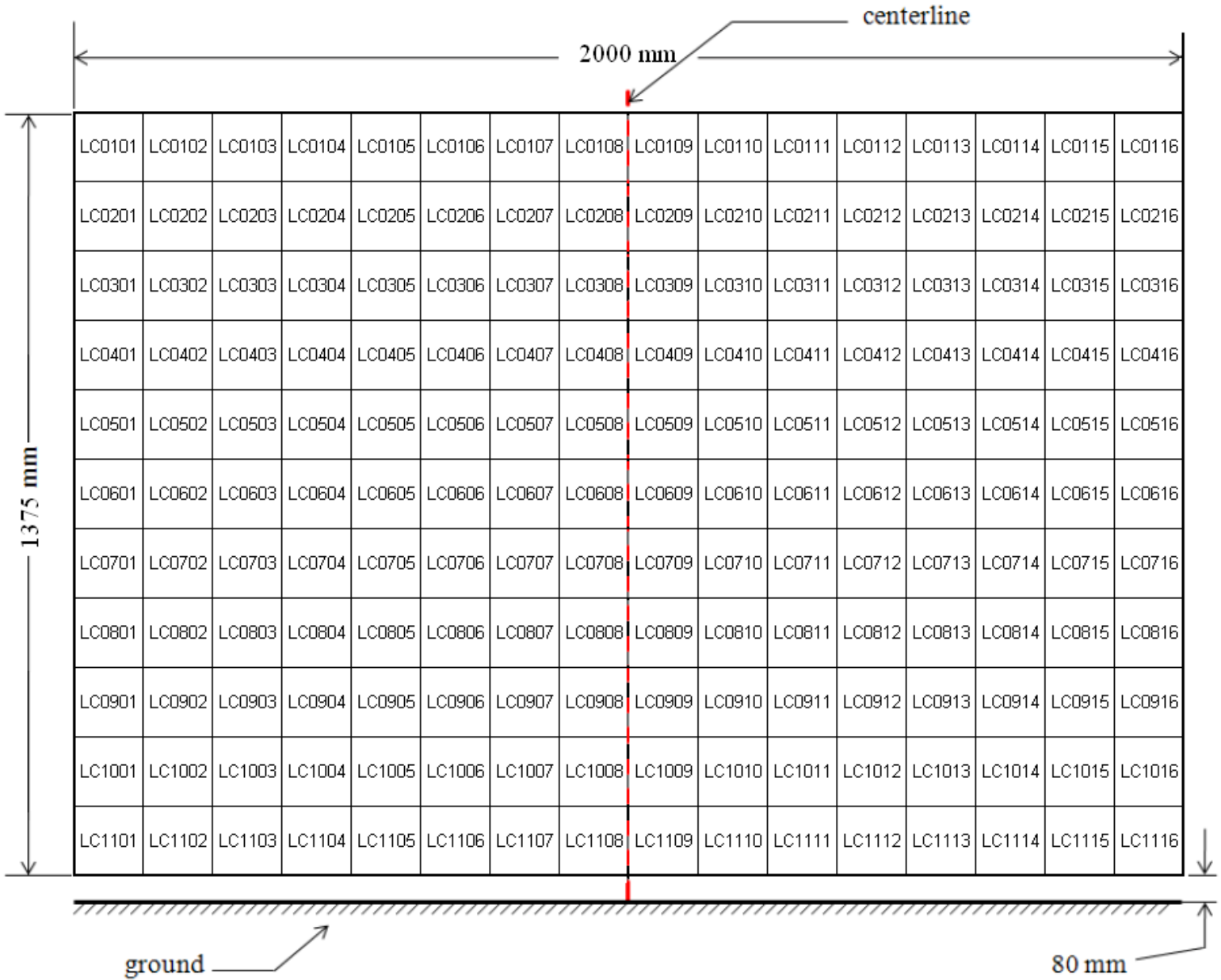
All measurements in millimeters.

**DATA SHEET NO. 9**

**LOAD CELL LOCATIONS ON FIXED BARRIER**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15



**DATA SHEET NO. 10**

**TEST VEHICLE CAMERA AND INSTRUMENTATION SUMMARY**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**INSTRUMENTATION**

Driver Dummy Accelerometers	50
Passenger Dummy Accelerometers	50
Vehicle Structure Accelerometers	8
Seat Belt Load Cells	2
Load Cell Barrier	528
Total	638

**CAMERA COVERAGE**

High-Speed Vehicle On Board	2
High-Speed Off board	14
Real Time	3
Total	19

**DATA SHEET NO. 11**  
**POST-TEST OBSERVATIONS**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**TEST DUMMY INFORMATION AND CONTACT**

Description	Driver	Passenger
Dummy Type/Serial No.	P572E 50th Percentile Male ATD / 360	P572O 5th Percentile Female ATD / 141
Head Contact	Airbag, Headrest	Airbag, Headrest
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Knee Airbag	None
Right Knee Contact	Knee Airbag	None

**DOOR OPENING AND SEAT TRACK INFORMATION**

Description	Driver	Passenger
Locked / Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Rear Door Opening	N/A	N/A
Seat Track Shift (mm)	0	0
Seat Back Failure	None	None
Glazing Damage	None	None

**POST TEST STRUCTURAL OBSERVATIONS**

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

**VEHICLE REBOUND FROM BARRIER**

Measured Parameter	Units	Value
Left Side	mm	611
Center	mm	615
Right Side	mm	635
Average	mm	620

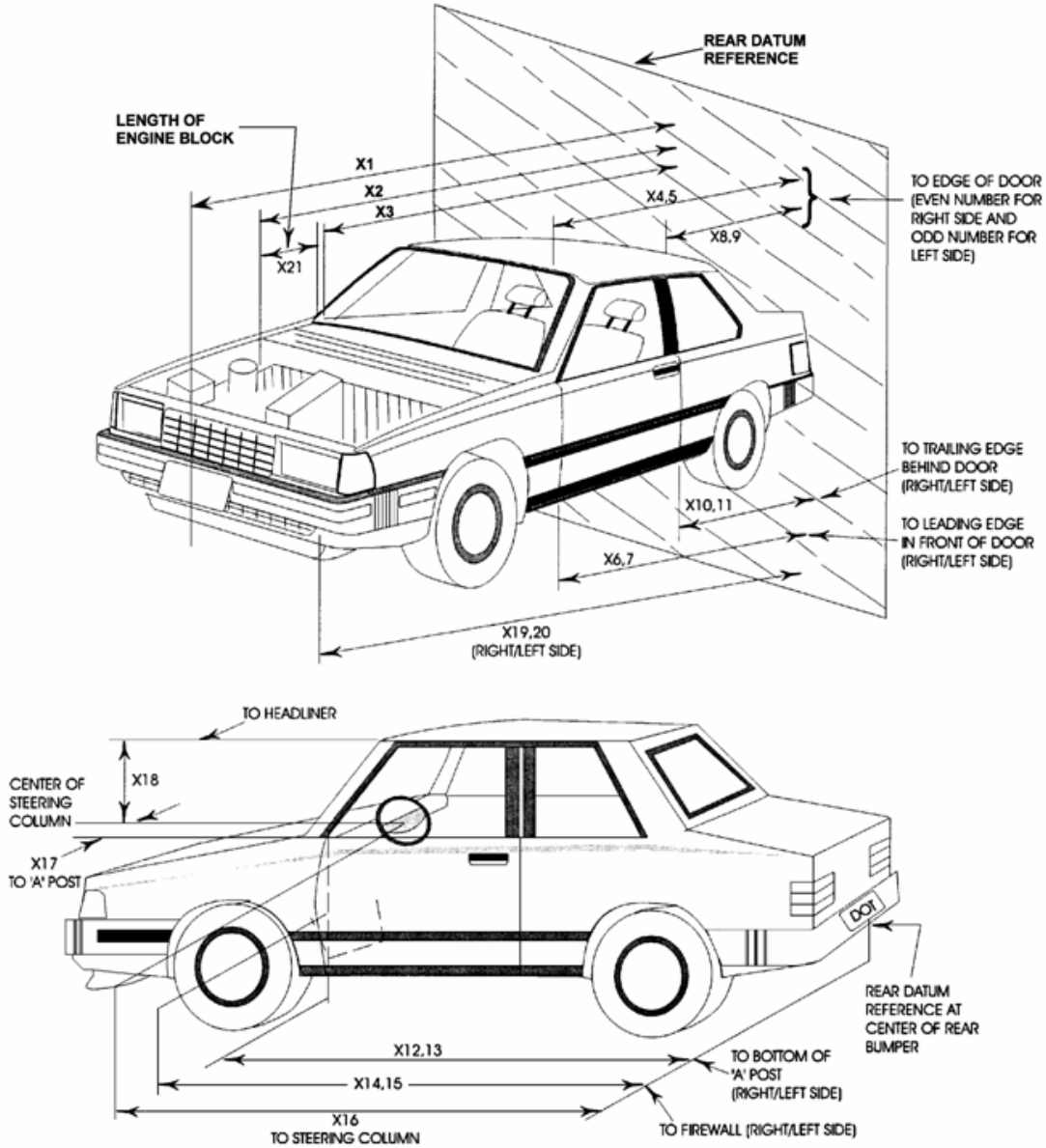
**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Driver		Passenger	
	Installed	Operated	Installed	Operated
Front Airbag	Yes	Yes	Yes	Yes
Side Airbag 1 (Curtain)	Yes	No	Yes	No
Side Airbag 2 (Torso/Pelvis)	Yes	No	Yes	No
Knee Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Active Glovebox	No		Yes	No*

\*This device is not designed to deploy in a full frontal impact with a belted 5<sup>th</sup> percentile occupant

**DATA SHEET NO. 12**  
**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15



**DATA SHEET NO. 12 ... (CONTINUED)**

**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4790	4196	-594
2	Rear Surface of Vehicle to Front of Engine	3966	3897	-69
3	RSOV to Firewall	3353	3340	-13
4	RSOV to Upper Leading Edge of Right Door	3144	3138	-6
5	RSOV to Upper Leading Edge of Left Door	3137	3133	-4
6	RSOV to Lower Leading Edge of Right Door	3111	3103	-8
7	RSOV to Lower Leading Edge of Left Door	3108	3104	-4
8	RSOV to Upper Trailing Edge of Right Door	1738	1733	-5
9	RSOV to Upper Trailing Edge of Left Door	1727	1725	-2
10	RSOV to Lower Trailing Edge of Right Door	1882	1875	-7
11	RSOV to Lower Trailing Edge of Left Door	1880	1879	-1
12	RSOV to Bottom of A-Pillar, Right Side	3036	3029	-7
13	RSOV to Bottom of A-Pillar, Left Side	3022	3025	3
14	RSOV to Firewall, Right Side	3277	3268	-9
15	RSOV to Firewall, Left Side	3270	3290	20
16	RSOV to Steering Column	2550	2590	40
17	Center of Steering Column to A-Pillar	425	445	20
18	Center of Steering Column to Headliner	385	386	1
19	RSOV to Right Side of Front Bumper	4050	3705	-345
20	RSOV to Left Side of Front Bumper	4045	3800	-245
21	Length of Engine Block	550	550	0
RD	RSOV to Right Side of Dash Panel	2858	2865	7
CD	RSOV to Center of Dash Panel	2795	2742	-53
LD	RSOV to Left Side of Dash Panel	2840	2859	19

All measurements in millimeters.

**DATA SHEET NO. 13**

**ACCIDENT INVESTIGATION DIVISION DATA**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

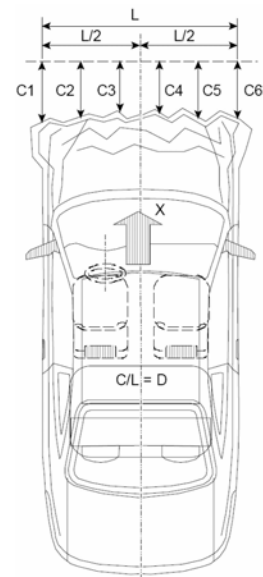
**VEHICLE INFORMATION**

VIN: 1FA6P8AMXF5309966 Wheelbase (mm): 2722  
 Vehicle Size Category: 2-Door Coupe Test Weight (kg): 1764.0

**ACCELEROMETER DATA**

Accelerometer Locations: Left Rear Crossmember  
 Cal. Procedure/Interval: Drop Test / 6 months  
 Integration Algorithm: NHTSA Standard  
 Impact Velocity (km/h): 55.99  
 Velocity Change (km/h): 65.0  
 Time of Separation (msec): 77.2

Linearity: Good



**CRUSH PROFILE**

Collision Deformation Classification: 12FDEW2  
 Midpoint of Damage: Vehicle Centerline  
 Damage Region Length (mm): 1448  
 Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	250	610	360
C2	Crush Zone 2 at Left Side	mm	80	635	555
C3	Crush Zone 3 at Left Side	mm	35	608	573
C4	Crush Zone 4 at Right Side	mm	35	613	578
C5	Crush Zone 5 at Right Side	mm	83	664	581
C6	Crush Zone 6 at Right Side	mm	243	613	370
L	C1 to C6	mm	1448		

**DATA SHEET NO. 14**

**VEHICLE INTRUSION MEASUREMENTS**

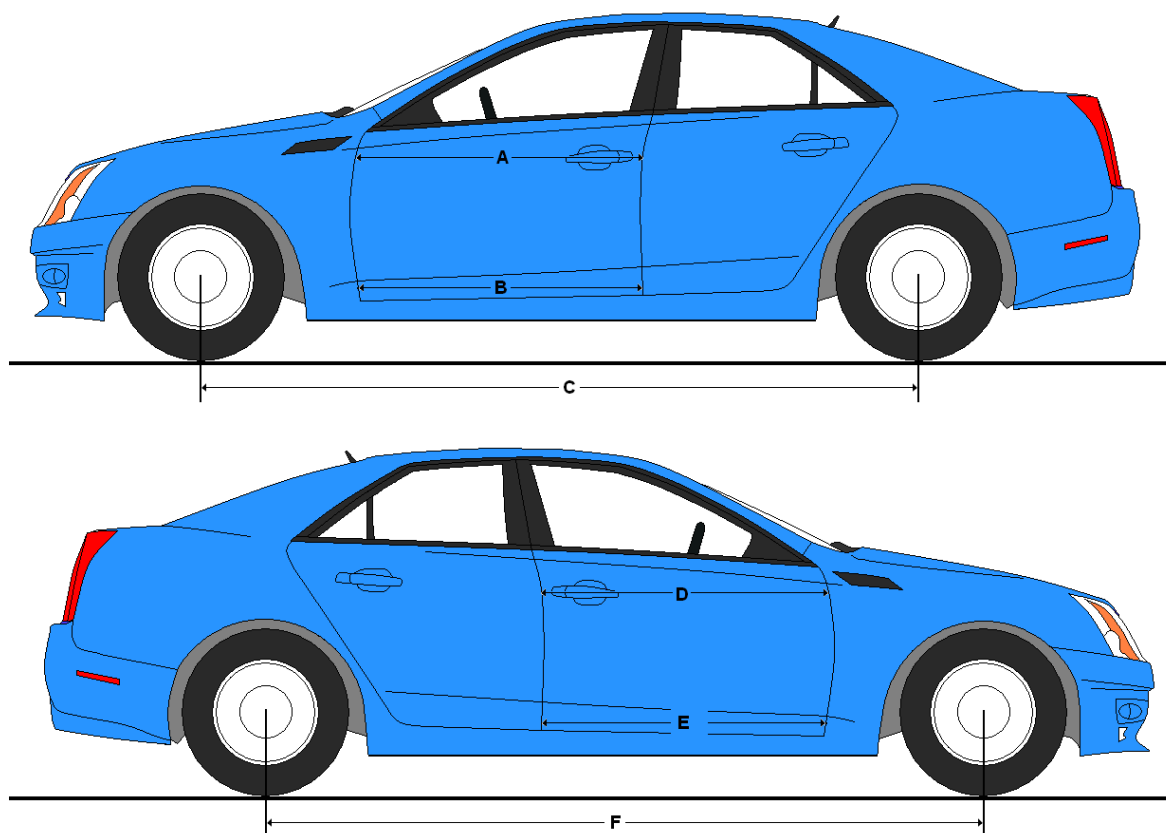
Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**DOOR OPENING WIDTH**

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1218	1217	1
B	Left Side Lower	mm	1102	1102	0
D	Right Side Upper	mm	1226	1227	-1
E	Right Side Lower	mm	1111	1117	-6

**WHEELBASE MEASUREMENTS**

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2722	2614	108
F	Right Side Wheelbase	mm	2723	2618	105



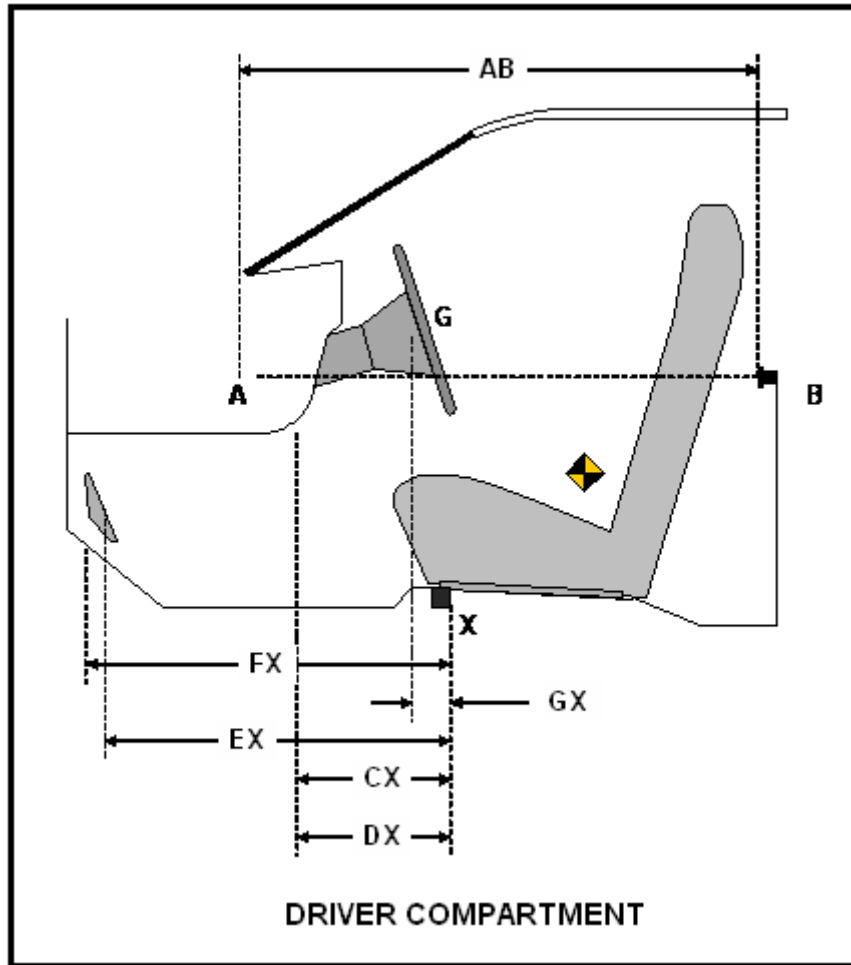
**DATA SHEET NO. 14 ... (CONTINUED)**  
**VEHICLE INTRUSION MEASUREMENTS**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

**DRIVER COMPARTMENT INTRUSION**

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jamb)	mm	1036	1043	-7
CX	Left Knee Bolster to X	mm	340	331	9
DX	Right Knee Bolster to X	mm	315	310	5
EX	Brake Pedal to X	mm	570	560	10
FX	Foot Rest to X	mm	610	600	10
GX	Center of Steering Wheel Hub to X	mm	35	26	9

X = Front of Seat Track (Stationary)



**DATA SHEET NO. 15**

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

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

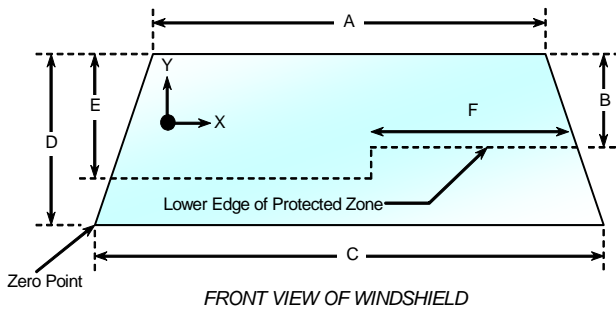
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with plastic molding and rubber cement.

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

Temperature of windshield molding during test: 21.2 ° C

**WINDSHIELD PERIPHERY MEASUREMENTS**

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2145	2145	100.0%
Right Side	2145	2145	100.0%
Total	4290	4290	100.0%



Item	Units	Value
A	mm	1290
B	mm	330
C	mm	1540
D	mm	730
E	mm	340
F	mm	600

**AREAS OF PROTECTED ZONE FAILURES**

A. Provide Coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one that is normally in contact with the windshield.

X	Y

B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y

**DATA SHEET NO. 15 ... (CONTINUED)**

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

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15

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

Temperature at Time of Impact: 18.9° C Test Time: 1:38 PM

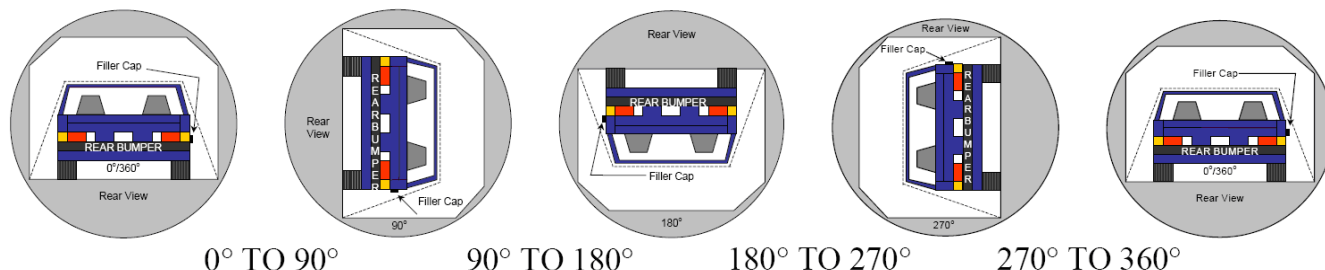
**Stoddard Solvent Spillage Measurements**

- 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./minute)
- D. Spillage: There was no Stoddard solvent spillage.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## DATA SHEET NO. 16

### FMVSS 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard solvent spillage: There was no Stoddard solvent spillage.

#### SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	83	300	383
90° To 180°	86	300	386
180° To 270°	84	300	384
270° To 360°	85	300	385

#### FMVSS 301 SPILLAGE TABLE

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° To 90°	0			
90° To 180°	0			
180° To 270°	0			
270° To 360°	0			

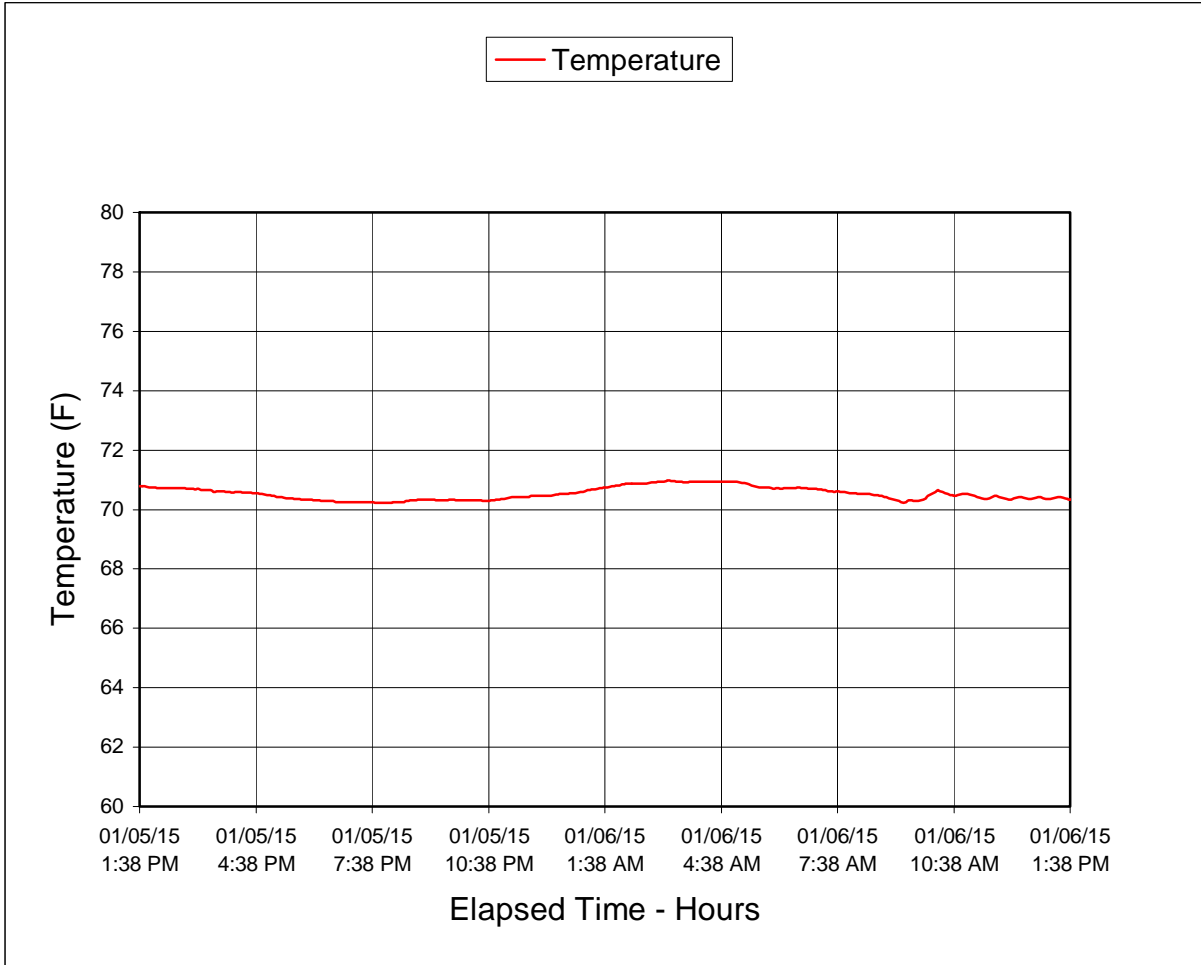
#### SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° To 90°	N/A
90° To 180°	N/A
180° To 270°	N/A
270° To 360°	N/A

**DATA SHEET NO. 17**

**DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART**

Test Vehicle: 2015 Ford Mustang 2-Door Coupe NHTSA No.: M20150219  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 01/06/15



**APPENDIX A  
PHOTOGRAPHS**

## TABLE OF PHOTOGRAPHS

Figure		Page
1	Load Cell Location	A-1
2	Load Cell Wall	A-1
3	Manufacturer's Label	A-2
4	Tire Placard	A-2
5	2015 Ford Mustang Frontal as Delivered	A-3
6	Left Rear $\frac{3}{4}$ View, as Received	A-3
7	Pre-Test Front View of Test Vehicle	A-4
8	Post-Test Front View of Test Vehicle	A-4
9	Pre-Test Left View of Test Vehicle	A-5
10	Post-Test Left View of Test Vehicle	A-5
11	Pre-Test Right View of Test Vehicle	A-6
12	Post-Test Right View of Test Vehicle	A-6
13	Pre-Test Right Front $\frac{3}{4}$ View	A-7
14	Post-Test Right Front $\frac{3}{4}$ View	A-7
15	Pre-Test Left Rear $\frac{3}{4}$ View	A-8
16	Post-Test Left Rear $\frac{3}{4}$ View	A-8
17	Pre-Test Windshield View	A-9
18	Post-Test Windshield View	A-9
19	Pre-Test Engine Compartment View	A-10
20	Post-Test Engine Compartment View	A-10
21	Pre-Test Fuel Filler Cap View	A-11
22	Post-Test Fuel Filler Cap View	A-11
23	Pre-Test Front Underbody View	A-12
24	Post-Test Front Underbody View	A-12
25	Pre-Test Rear Underbody View	A-13
26	Post-Test Rear Underbody View	A-13
27	Pre-Test Dummy Cable Routing	A-14
28	Post-Test Dummy Cable Routing	A-14
29	Pre-Test Driver Dummy Front View	A-15
30	Post-Test Driver Dummy Front View	A-15
31	Pre-Test Driver Dummy Window View	A-16
32	Post-Test Driver Dummy Window View	A-16
33	Pre-Test Driver Dummy and Vehicle Interior View	A-17
34	Post-Test Driver Dummy and Vehicle Interior View	A-17
35	Pre-Test Driver's Seat Fore-Aft Markings	A-18

## TABLE OF PHOTOGRAPHS ... (CONTINUED)

<u>Figure</u>		<u>Page</u>
36	Post-Test Driver's Seat Fore-Aft Markings	A-18
37	Pre-Test View of Belt Anchorage for Driver Dummy	A-19
38	Post-Test View of Belt Anchorage for Driver Dummy	A-19
39	Pre-Test Driver Dummy Feet	A-20
40	Post-Test Driver Dummy Feet	A-20
41	Pre-Test Driver's Side Knee Bolster	A-21
42	Post-Test Driver's Side Knee Bolster	A-21
43	Pre-Test Driver's Side Floorpan	A-22
44	Post-Test Driver's Side Floorpan	A-22
45	Post-Test Driver Dummy Face	A-23
46	Post-Test Driver Dummy Contact with Airbag	A-23
47	Post-Test Driver Dummy Contact with Headrest	A-24
47a	Post-Test Driver Dummy Contact with Knee Airbag	A-24
48	Pre-Test View of the Steering Wheel	A-25
49	Post-Test View of the Steering Wheel	A-25
50	Pre-Test Passenger Dummy Front View	A-26
51	Post-Test Passenger Dummy Front View	A-26
52	Pre-Test Passenger Dummy Window View	A-27
53	Post-Test Passenger Dummy Window View	A-27
54	Pre-Test Passenger Dummy and Vehicle Interior View	A-28
55	Post-Test Passenger Dummy and Vehicle Interior View	A-28
56	Pre-Test Passenger's Seat Fore-Aft Markings	A-29
57	Post-Test Passenger's Seat Fore-Aft Markings	A-29
58	Pre-Test View of Belt Anchorage for Passenger Dummy	A-30
59	Post-Test View of Belt Anchorage for Passenger Dummy	A-30
60	Pre-Test Passenger Dummy Feet	A-31
61	Post-Test Passenger Dummy Feet	A-31
62	Pre-Test Passenger's Side Knee Bolster	A-32
63	Post-Test Passenger's Side Knee Bolster	A-32
64	Pre-Test Passenger's Side Floorpan	A-33
65	Post-Test Passenger's Side Floorpan	A-33
66	Post-Test Passenger Dummy Face	A-34
67	Post-Test Passenger Dummy Contact with Airbag	A-34
68	Post-Test Passenger Dummy Contact with Headrest	A-35
69	Photograph of Ballast Installed in Vehicle	A-35

## TABLE OF PHOTOGRAPHS ... (CONTINUED)

<u>Figure</u>		<u>Page</u>
70	Post-Test Stoddard Solvent Spillage Location View	A-36
71	Post-Test Speed Trap Read-Out	A-36
72	Vehicle at 0° on Static Rollover Device	A-37
73	Vehicle at 90° on Static Rollover Device	A-37
74	Vehicle at 180° on Static Rollover Device	A-38
75	Vehicle at 270° on Static Rollover Device	A-38
76	Vehicle at 360° on Static Rollover Device	A-39
77	2015 Ford Mustang Frontal Impact Event	A-39
78	Monroney Label Photograph	A-40

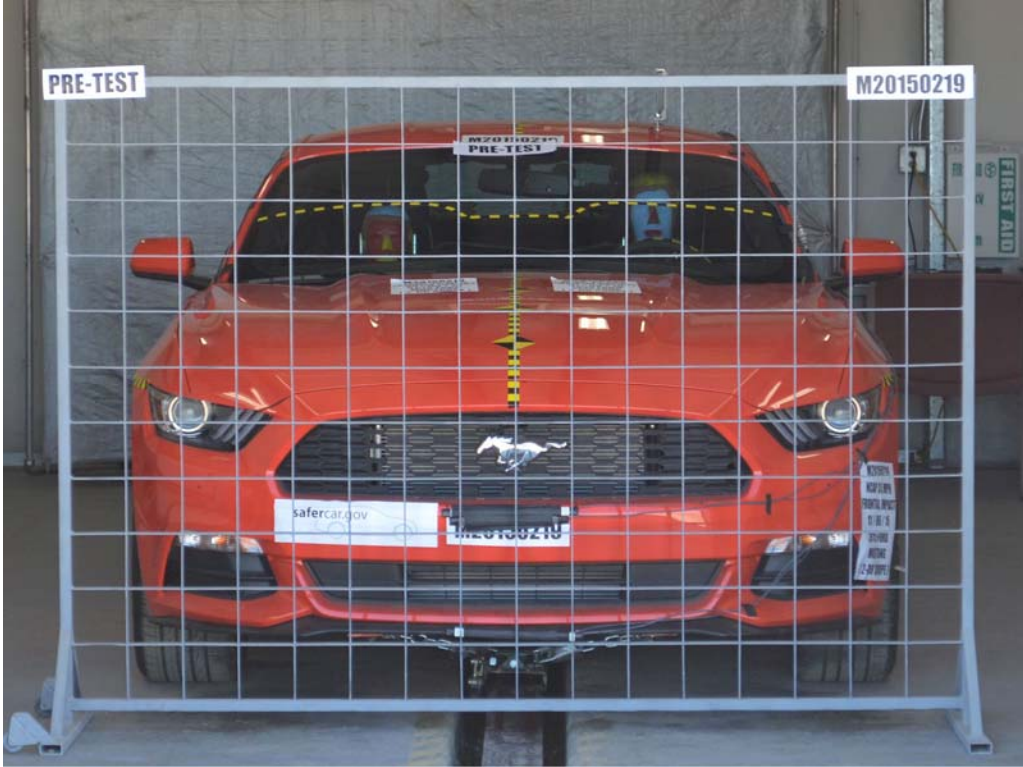


FIGURE 1. Load Cell Location

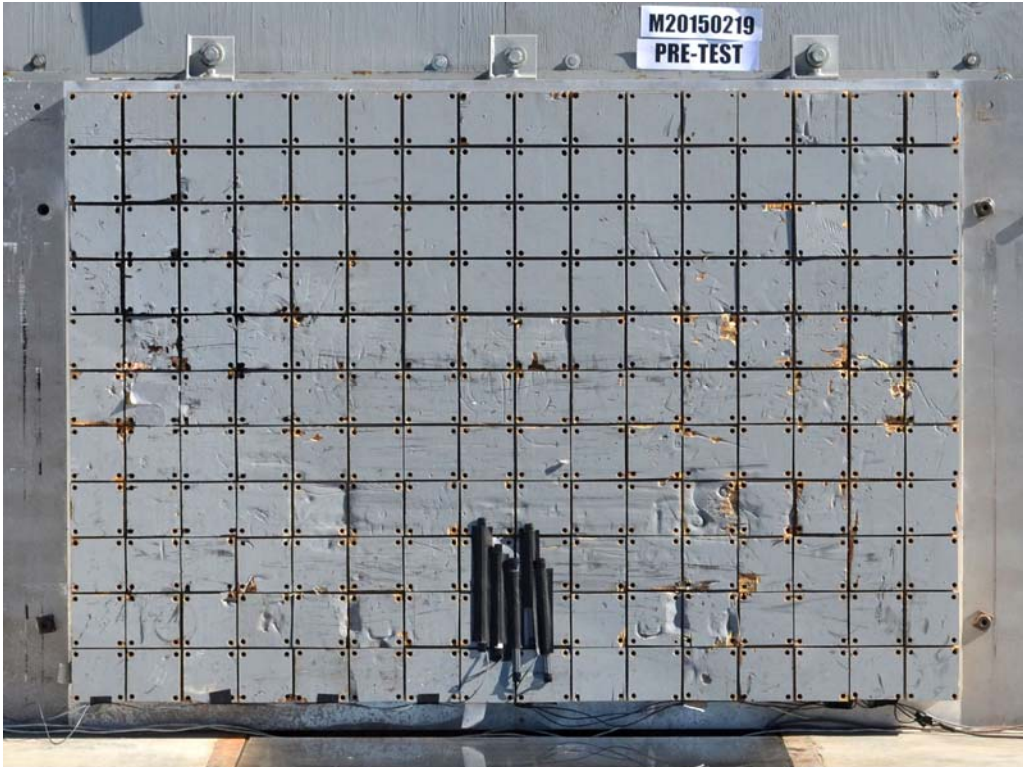


FIGURE 2. Load Cell Wall



FIGURE 3. Manufacturer's Label

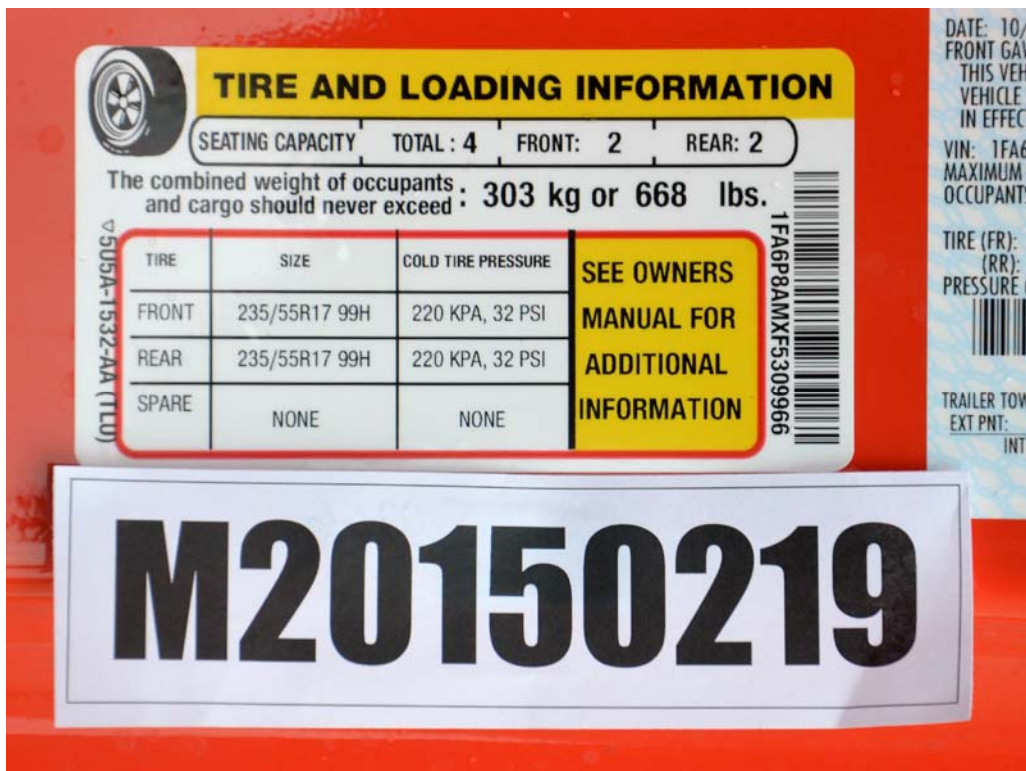


FIGURE 4. Tire Placard



FIGURE 5. 2015 Ford Mustang Frontal as Delivered



FIGURE 6. Left Rear  $\frac{3}{4}$  View, as Received



FIGURE 7. Pre-Test Front View of Test Vehicle

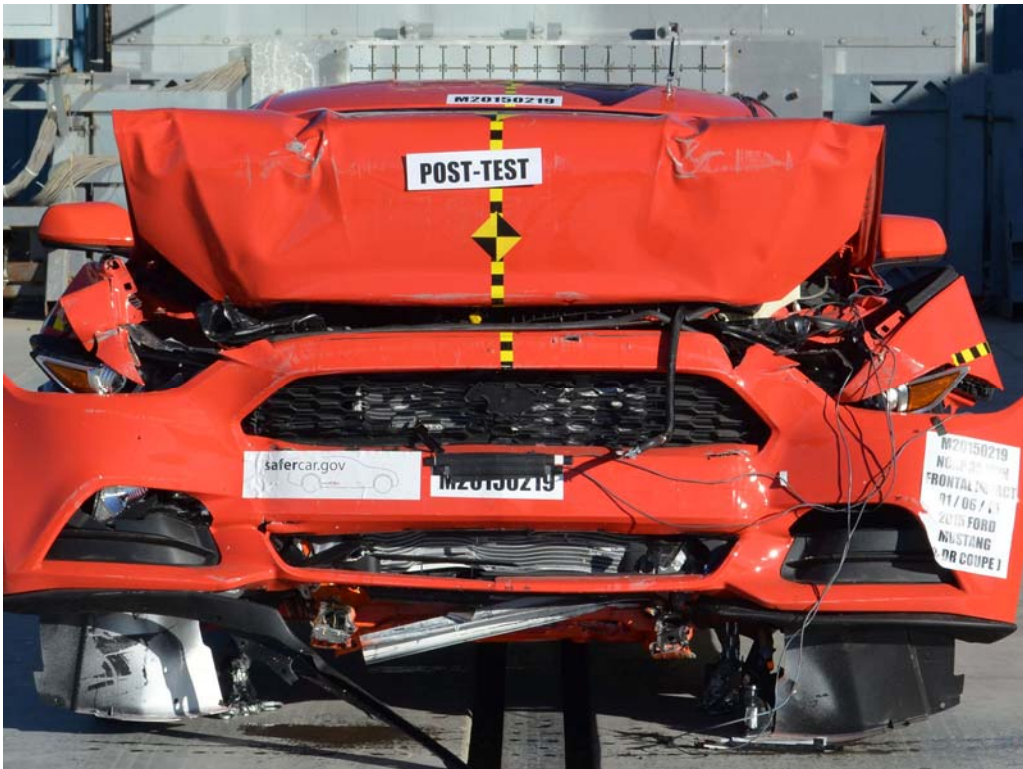


FIGURE 8. Post-Test Front View of Test Vehicle



FIGURE 9. Pre-Test Left View of Test Vehicle



FIGURE 10. Post-Test Left View of Test Vehicle



FIGURE 11. Pre-Test Right View of Test Vehicle



FIGURE 12. Post-Test Right View of Test Vehicle



FIGURE 13. Pre-Test Right Front  $\frac{3}{4}$  View



FIGURE 14. Post-Test Right Front  $\frac{3}{4}$  View



FIGURE 15. Pre-Test Left Rear  $\frac{3}{4}$  View



FIGURE 16. Post-Test Left Rear  $\frac{3}{4}$  View



FIGURE 17. Pre-Test Windshield View



FIGURE 18. Post-Test Windshield View





FIGURE 21. Pre-Test Fuel Filler Cap View



FIGURE 22. Post-Test Fuel Filler Cap View



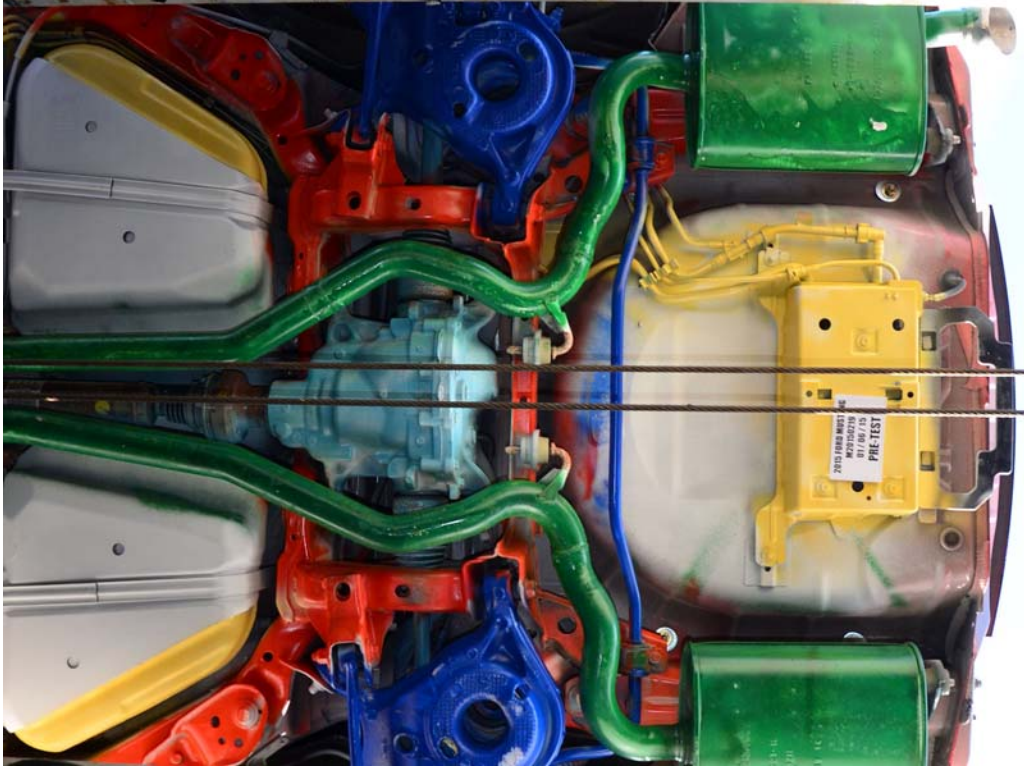


FIGURE 25. Pre-Test Rear Underbody View

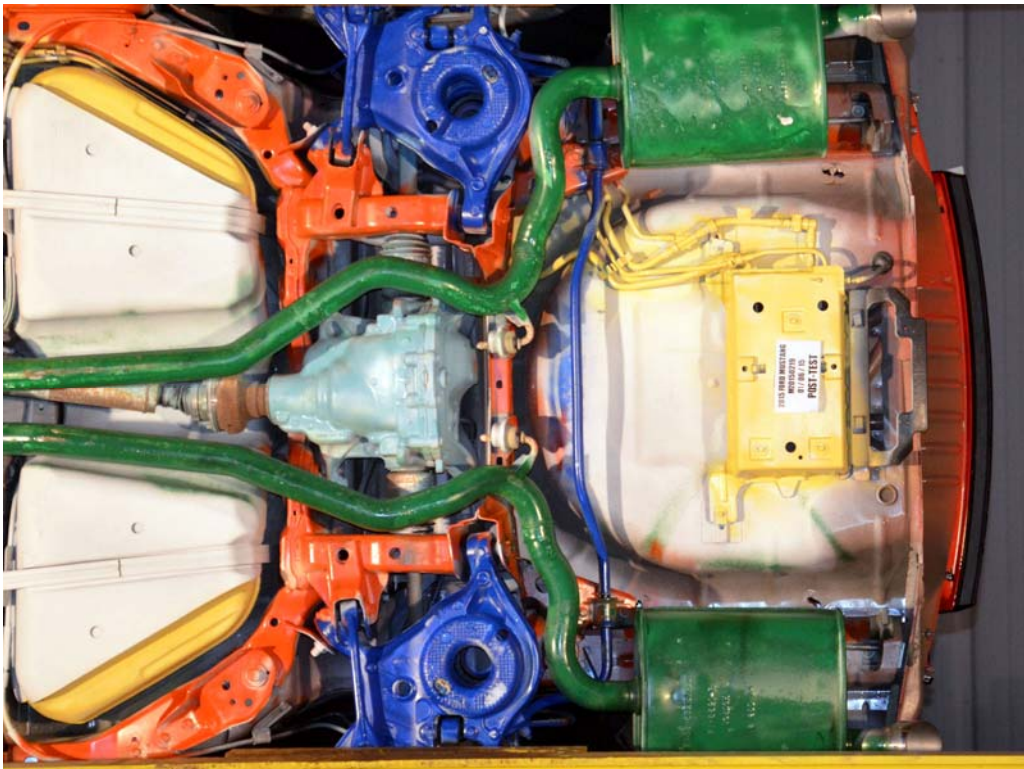


FIGURE 26. Post-Test Rear Underbody View



FIGURE 27. Pre-Test Dummy Cable Routing



FIGURE 28. Post-Test Dummy Cable Routing



FIGURE 29. Pre-Test Driver Dummy Front View



FIGURE 30. Post-Test Driver Dummy Front View



FIGURE 31. Pre-Test Driver Dummy Window View



FIGURE 32. Post-Test Driver Dummy Window View



FIGURE 33. Pre-Test Driver Dummy and Vehicle Interior View



FIGURE 34. Post-Test Driver Dummy and Vehicle Interior View



FIGURE 35. Pre-Test Driver's Seat Fore-Aft Markings



FIGURE 36. Post-Test Driver's Seat Fore-Aft Markings

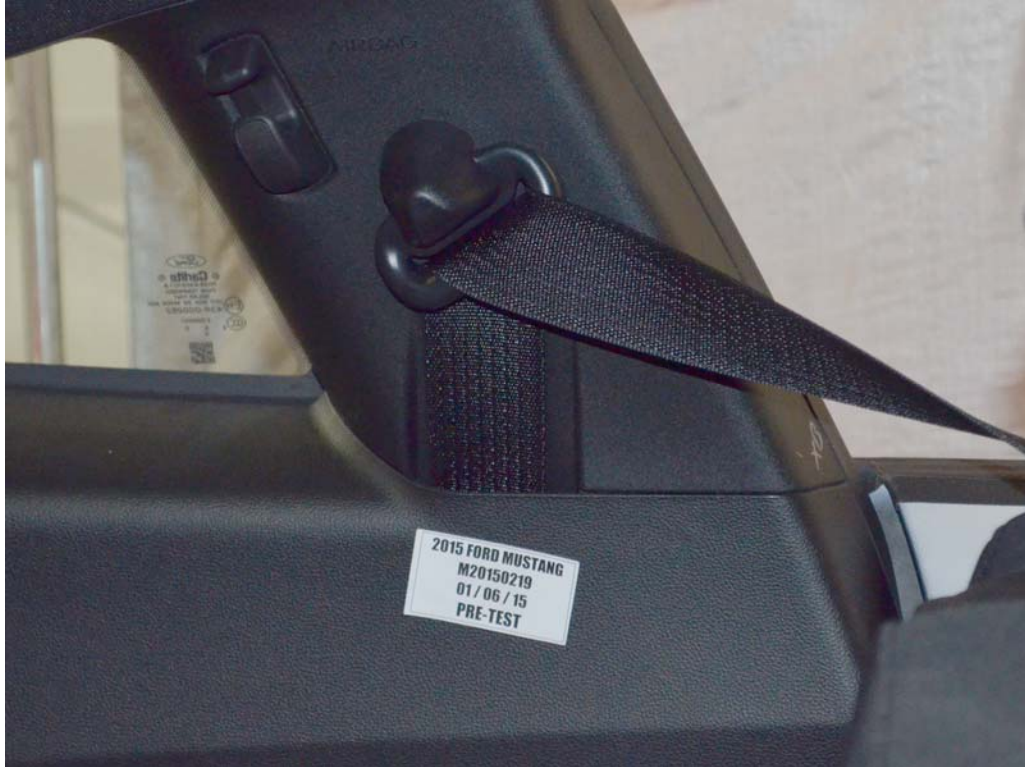


FIGURE 37. Pre-Test View of Belt Anchorage for Driver Dummy



FIGURE 38. Post-Test View of Belt Anchorage for Driver Dummy



FIGURE 39. Pre-Test Driver Dummy Feet



FIGURE 40. Post-Test Driver Dummy Feet



FIGURE 41. Pre-Test Driver's Side Knee Bolster



FIGURE 42. Post-Test Driver's Side Knee Bolster



FIGURE 43. Pre-Test Driver's Side Floorpan



FIGURE 44. Post-Test Driver's Side Floorpan



FIGURE 45. Post-Test Driver Dummy Face



FIGURE 46. Post-Test Driver Dummy Contact with Airbag



FIGURE 47. Post-Test Driver Dummy Contact with Headrest



FIGURE 47a. Post-Test Driver Dummy Contact with Knee Airbag

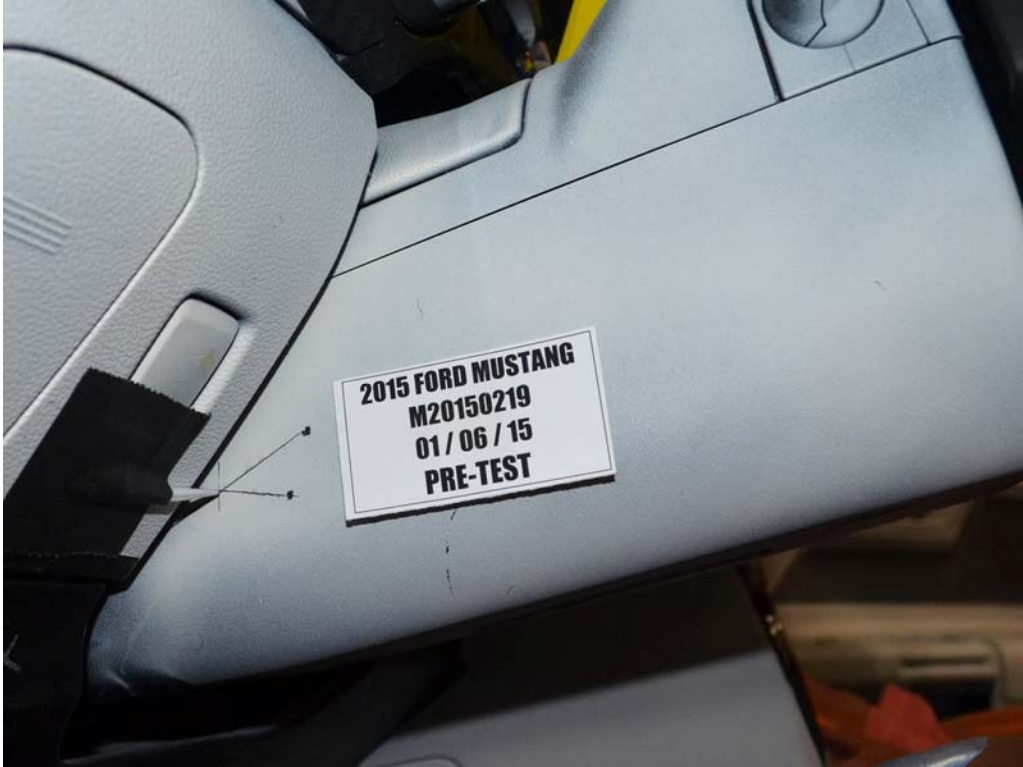


FIGURE 48. Pre-Test View of the Steering Wheel



FIGURE 49. Post-Test View of the Steering Wheel



FIGURE 50. Pre-Test Passenger Dummy Front View

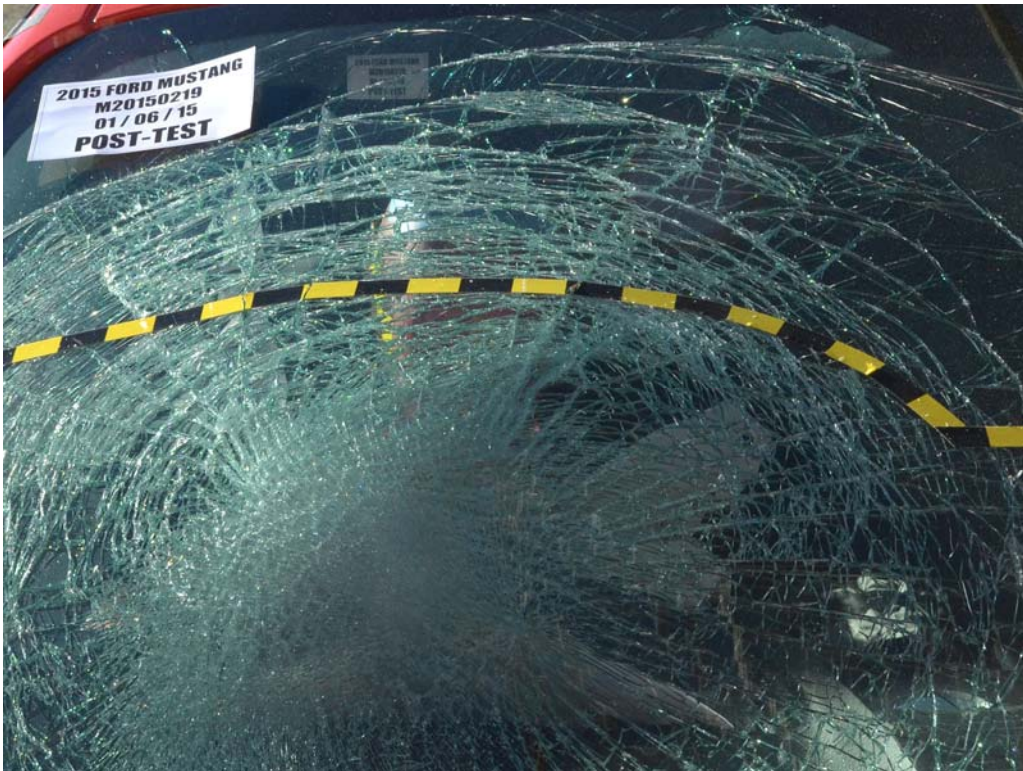


FIGURE 51. Post-Test Passenger Dummy Front View



FIGURE 52. Pre-Test Passenger Dummy Window View



FIGURE 53. Post-Test Passenger Dummy Window View



FIGURE 54. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 55. Post-Test Passenger Dummy and Vehicle Interior View

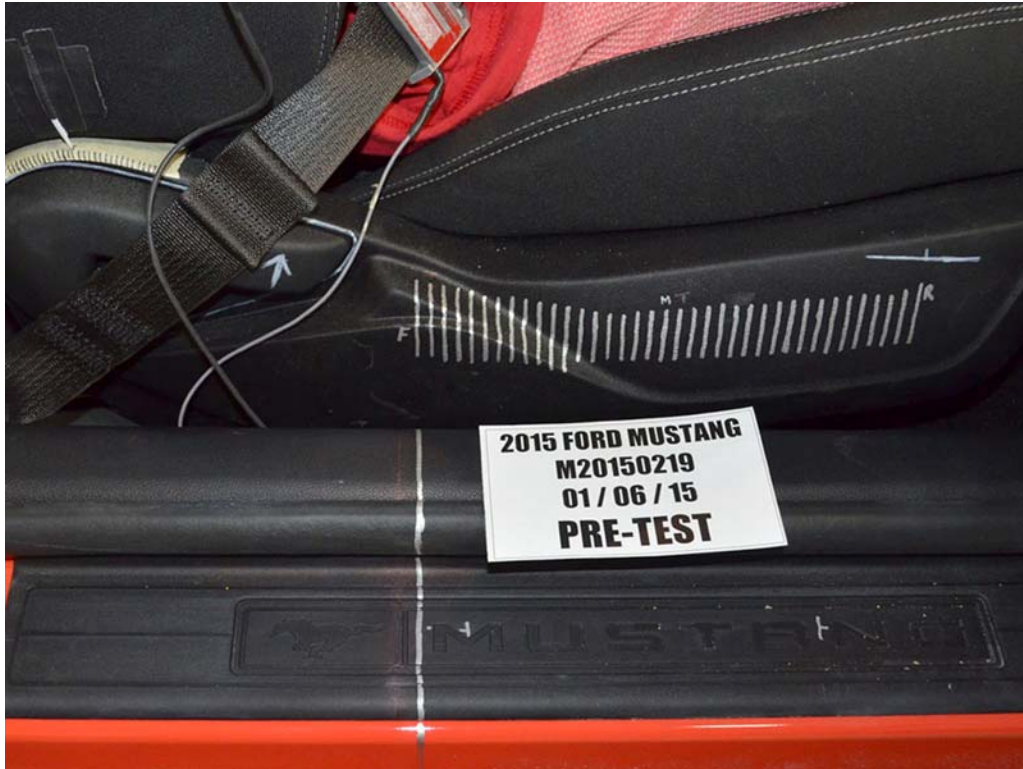


FIGURE 56. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 57. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 58. Pre-Test View of Belt Anchorage for Passenger Dummy



FIGURE 59. Post-Test View of Belt Anchorage for Passenger Dummy

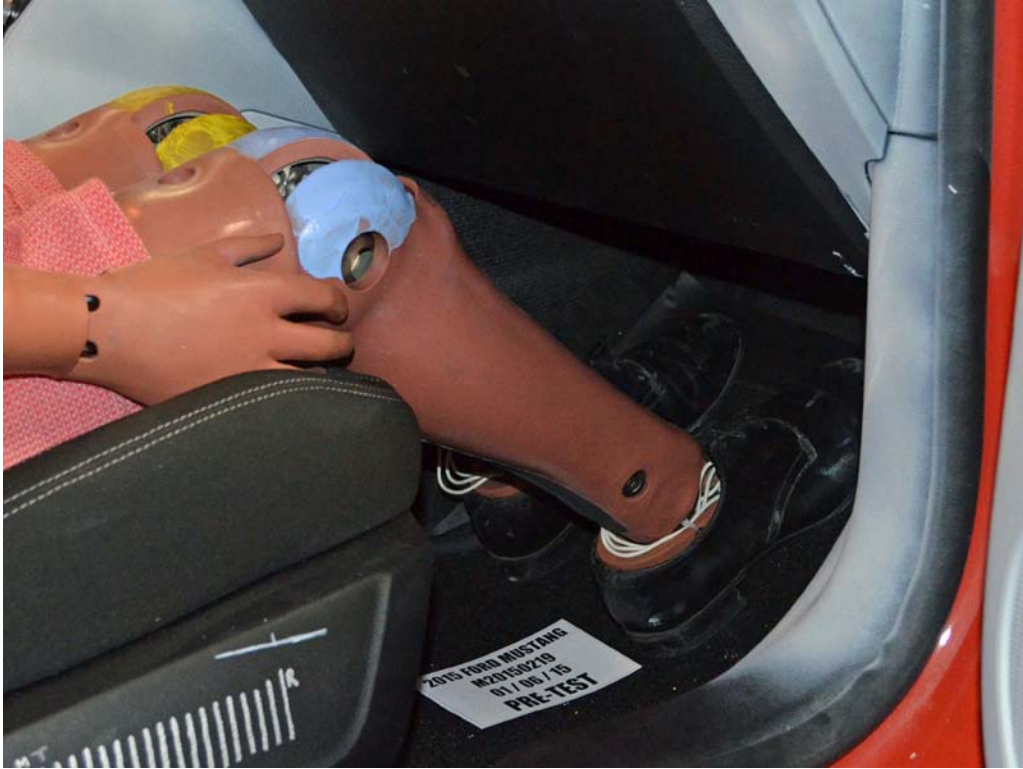


FIGURE 60. Pre-Test Passenger Dummy Feet



FIGURE 61. Post-Test Passenger Dummy Feet



FIGURE 62. Pre-Test Passenger's Side Knee Bolster



FIGURE 63. Post-Test Passenger's Side Knee Bolster



FIGURE 64. Pre-Test Passenger's Side Floorpan



FIGURE 65. Post-Test Passenger's Side Floorpan



FIGURE 66. Post-Test Passenger Dummy Face



FIGURE 67. Post-Test Passenger Dummy Contact with Airbag



FIGURE 68. Post-Test Passenger Dummy Contact with Headrest



FIGURE 69. Photograph of Ballast Installed in Vehicle

# Photograph Not Applicable

## No Stoddard Solvent Spillage

FIGURE 70. Post-Test Stoddard Solvent Spillage Location View



FIGURE 71. Post-Test Speed Trap Read-Out



FIGURE 72. Vehicle at 0° on Static Rollover Device



FIGURE 73. Vehicle at 90° on Static Rollover Device



FIGURE 74. Vehicle at 180° on Static Rollover Device

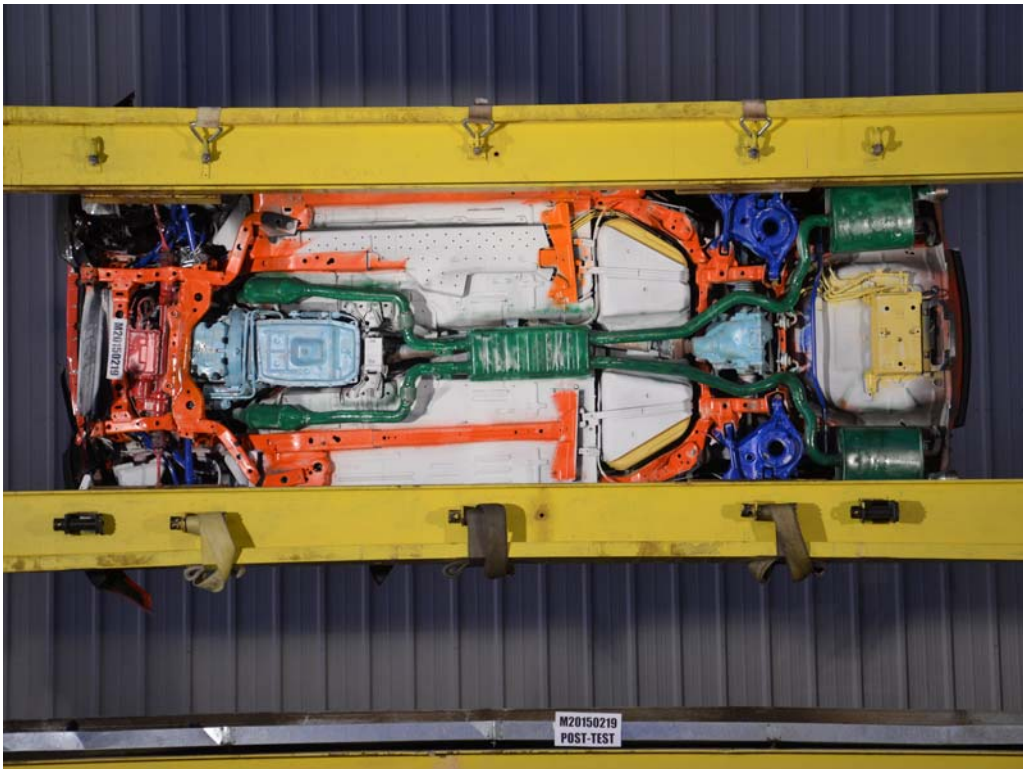


FIGURE 75. Vehicle at 270° on Static Rollover Device



FIGURE 76. Vehicle at 360° on Static Rollover Device



FIGURE 77. 2015 Ford Mustang Frontal Impact Event

 <b>MUSTANG</b> 2015 V6 COUPE 4-DOOR HATCHBACK SPORTS CAR 3.7L HATCH V6 6-SPEED SELECT SHIFT AUTO		<b>F5 309966</b> EXTERIOR COGNAC/TITAN ORANGE INTERIOR EBONY CLOTH SPORTS BUCKET		<b>EPA DOT Fuel Economy and Environment</b> Gasoline Vehicle <b>Fuel Economy</b> <b>22</b> MPG combined city/hwy 19 28 city highway 4.5 gallons per 100 miles Subcompact Cars range from 15 to 113 MPG. The best vehicle rates 113 MPG.	
<b>STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE</b> <b>EXTERIOR</b> • 17" PAINTED ALUMINUM WHEELS • HID PROJECTOR HEADLAMPS • AUTO HEADLAMPS • LED TAILLAMPS • SEQUENTIAL REAR TURN SIGNALS • REAR WINDOW DEFROSTER • DUAL EXHAUST SYSTEM • BRIGHT TIPS • VARIABLE INTERIOR WIPERS • INTEGRATED SPOTTER MIRRORS <b>INTERIOR</b> • CLOTTI FRONT BUCKET SEATS • MANUAL 4-WAY DRIVER SEAT • MANUAL 2-WAY FRNT PASSENGER SEAT • CENTER CONSOLE W/ARMREST • AIR CONDITIONING • AM/FM COMPACT CASSETTE • W/ AUDIO INPUT JACK • 18" TELESCOPE STEER COLUMN • CRUISE CONTROL • SPLIT FOLD REAR SEAT • FRONT FLOOR MATS - BLACK • INTERIOR TRUNK RELEASE • DUAL ILLUM VANITY MIRRORS <b>FUNCTIONAL</b> • SYNC • INTELLIGENT ACCESS W/PUSH BUTTON START • REAR VIEW CAMERA • PWR W/IN LOCK, MIRROR, REMOTE KEYLESS ENTRY • ELEC PWR ASSIST STEERING • POWER POINTS (2) • LIMITED SLIP REAR AXLE • AUTO DIM HEAVENVIEW MIRROR • EASY FUEL CAPLESS FILLER <b>SAFETY/SECURITY</b> • ADVANCED TRAC W/ESC • DUAL FRONT & SIDE AIRBAGS • AIRBAG, DRIVER KNEE • AIRBAGS - SIDE AIR CURTAIN • SOS POST CRASH ALERT SYS • SECURELOCK PASS-ANTI THEFT • PERMETER ALARMS • TIRE PRESSURE MONITOR SYS • LATCH CHILD SAFETY SYSTEM • MOKEY <b>WARRANTY</b> • 3YR/50,000 BUMPER TO BUMPER • 5YR/100,000 POWERTRAIN • 5YR/100,000 ROADSIDE ASSIST		<b>You spend \$1,000 more in fuel costs over 5 years</b> compared to the average new vehicle.		<b>Annual fuel cost \$2,400</b> <b>Fuel Economy &amp; Greenhouse Gas Rating</b> (passenger only) 1 2 3 4 5 10 15 20 25 30 35 40 45 50 This vehicle emits 428 grams CO <sub>2</sub> per mile. The best emits 0 grams per mile (passenger only). Producing and distributing fuel also creates emissions. See <a href="http://www.fueleconomy.gov">www.fueleconomy.gov</a> .	
<b>INCLUDED ON THIS VEHICLE (MSRP)</b> <b>EQUIPMENT GROUP 000A</b> 6-SPEED SELECT SHIFT AUTO FRONT LICENSE PLATE BRACKET CALIFORNIA EMISSIONS SYSTEM ENHANCED SECURITY PACKAGE ACTIVE ANTI-THEFT SYSTEM WHEEL LOCKING KIT 1,195.00 NO CHARGE NO CHARGE 96.00		<b>PRICE INFORMATION (MSRP)</b> BASE PRICE \$23,800.00 TOTAL OPTIONS 1,090.00 TOTAL VEHICLE & OPTIONS 25,190.00 DESTINATION & DELIVERY 825.00 <b>TOTAL MSRP \$26,015.00</b>		<b>fuel economy.gov</b> Calculate personalized estimates and compare vehicles.	
<b>GOVERNMENT 5-STAR SAFETY RATINGS</b> <b>Overall Vehicle Score Not Rated</b> Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight. <b>Frontal Crash</b> Driver Not Rated Passenger Not Rated Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight. <b>Side Crash</b> Front seat Not Rated Rear seat Not Rated Based on the risk of injury in a side impact. <b>Rollover Not Rated</b> Based on the risk of rollover in a single-vehicle crash. Star ratings range from 1 to 5 stars (*****), with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA). <a href="http://www.safercar.gov">www.safercar.gov</a> or 1-888-327-4226		  Scan this code to experience 30+ vehicles on fuel. 1FF5309968 to 68008 or Visit <a href="http://ford.com">ford.com</a> with your vehicle.			
<b>DEALER TO</b> Timberlake Ford 8845 Box 2200 Keyser WV 26726		<b>MSRP ONE</b> CV51 <b>DEALER NO.</b> 44V 550		<b>MSRP TWO</b> FINAL ASSEMBLY PLANT FLAT ROCK <b>METHOD OF TRANSIT</b> CONVOY <b>PER #</b> 44-2006 QIT 2 <b>EX141 N RA ZX 820 002553 10 14 4</b>	
<b>WARRANTY</b> Ford (EP) is the only extended service plan honored at every Ford dealership in the U.S. and Canada. See your dealer for additional details or visit <a href="http://www.FordService.com">www.FordService.com</a> for more information.		<b>FINANCING</b> Choose the vehicle you want. Whether you decide to lease or finance, you'll find the choice that's right for you. See your Ford Dealer for details or visit <a href="http://www.FordCredit.com">www.FordCredit.com</a> .			

FIGURE 78. Monroney label Photograph

**APPENDIX B**  
**DUMMY RESPONSE DATA TRACES**

## TABLE OF DATA PLOTS

Plot		Page
1	Driver Head X Acceleration vs. Time Primary	B-1
2	Driver Head Y Acceleration vs. Time Primary	B-1
3	Driver Head Z Acceleration vs. Time Primary	B-1
4	Driver Head Resultant Acceleration vs. Time Primary	B-1
5	Driver Chest X Deflection vs. Time	B-2
6	Driver Chest X Acceleration vs. Time Primary	B-3
7	Driver Chest Y Acceleration vs. Time Primary	B-3
8	Driver Chest Z Acceleration vs. Time Primary	B-3
9	Driver Chest Resultant Acceleration vs. Time Primary	B-3
10	Driver Upper Neck Force X vs. Time Primary	B-4
11	Driver Upper Neck Force Z vs. Time Primary	B-4
12	Driver Upper Neck Moment Y vs. Time Primary	B-4
13	Driver Nij vs. Time Primary	B-4
14	Driver Left Femur Force vs. Time	B-5
15	Driver Right Femur Force vs. Time	B-5
16	Passenger Head X Acceleration vs. Time Primary	B-6
17	Passenger Head Y Acceleration vs. Time Primary	B-6
18	Passenger Head Z Acceleration vs. Time Primary	B-6
19	Passenger Head Resultant Acceleration vs. Time Primary	B-6
20	Passenger Chest X Deflection vs. Time	B-7
21	Passenger Chest X Acceleration vs. Time Primary	B-8
22	Passenger Chest Y Acceleration vs. Time Primary	B-8
23	Passenger Chest Z Acceleration vs. Time Primary	B-8
24	Passenger Chest Resultant Acceleration vs. Time Primary	B-8
25	Passenger Upper Neck Force X vs. Time Primary	B-9
26	Passenger Upper Neck Force Z vs. Time Primary	B-9
27	Passenger Upper Neck Moment Y vs. Time Primary	B-9
28	Passenger Nij vs. Time Primary	B-9
29	Passenger Left Femur Force vs. Time	B-10
30	Passenger Right Femur Force vs. Time	B-10

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)

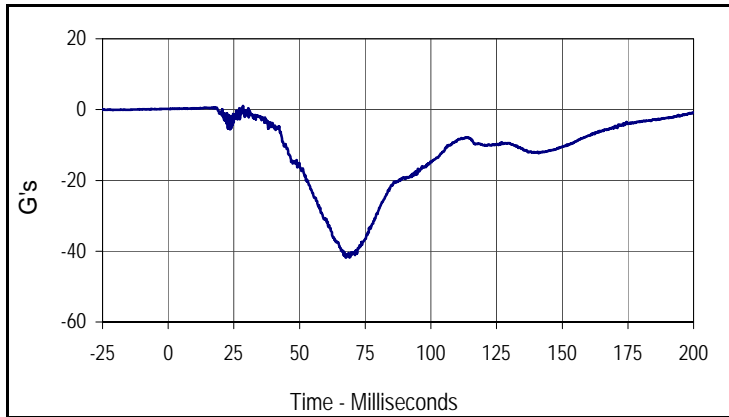
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Driver Head Y Acceleration Redundant  
Driver Head Z Acceleration Redundant  
Driver Head Front Y Acceleration  
Driver Head Front Z Acceleration  
Driver Head Top X Acceleration  
Driver Head Top Y Acceleration  
Driver Head Left X Acceleration  
Driver Head Left Z Acceleration  
Driver Upper Neck Force Y  
Driver Upper Neck Moment X  
Driver Upper Neck Moment Z  
Driver Chest X Acceleration Redundant  
Driver Chest Y Acceleration Redundant  
Driver Chest Z Acceleration Redundant  
Driver Pelvis X  
Driver Pelvis Y  
Driver Pelvis Z  
Driver Left Femur Force Z Redundant  
Driver Right Femur Force Z Redundant  
Driver Shoulder Belt Force  
Driver Lap Belt Force  
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  
Passenger Head X Acceleration Redundant  
Passenger Head Y Acceleration Redundant  
Passenger Head Z Acceleration Redundant  
Passenger Head Front Y Acceleration  
Passenger Head Front Z Acceleration  
Passenger Head Top X Acceleration  
Passenger Head Top Y Acceleration  
Passenger Head Left X Acceleration  
Passenger Head Left Z Acceleration  
Passenger Upper Neck Force X  
Passenger Upper Neck Force Z  
Passenger Upper Neck Moment Y  
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 Z Redundant  
Passenger Right Femur Force Z Redundant  
Passenger Shoulder Belt Force  
Passenger Lap Belt Force  
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

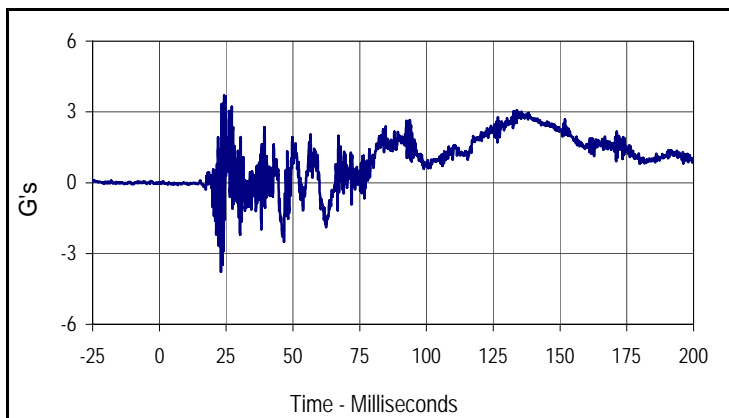
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Passenger Right Upper Tibia Force Z  
Passenger Right Lower Tibia Moment X  
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Passenger Left Foot Aft X  
Passenger Left Foot Aft Z  
Passenger Right Foot Fore Z  
Passenger Right Foot Aft X  
Passenger Right Foot Aft Z  
Left Rear Seat Crossmember X  
Left Rear Seat Crossmember Z  
Right Rear Seat Crossmember X  
Right Rear Seat Crossmember Z  
Vehicle Engine Top X  
Vehicle Engine Bottom X  
Vehicle Left Rear Z  
Vehicle Right Rear Z  
Load Cell Barrier LC0101 – LC 1116

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

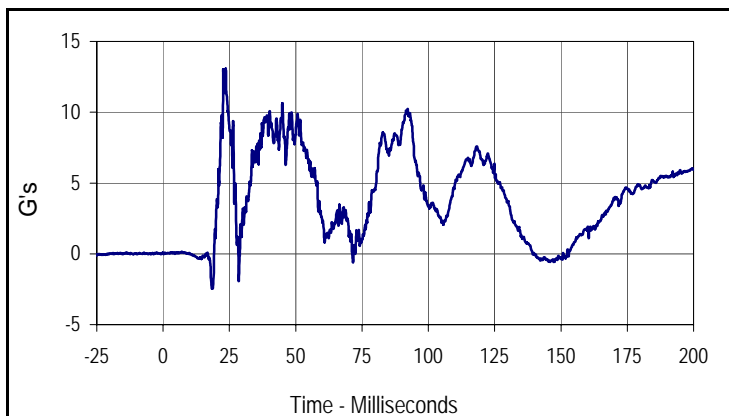
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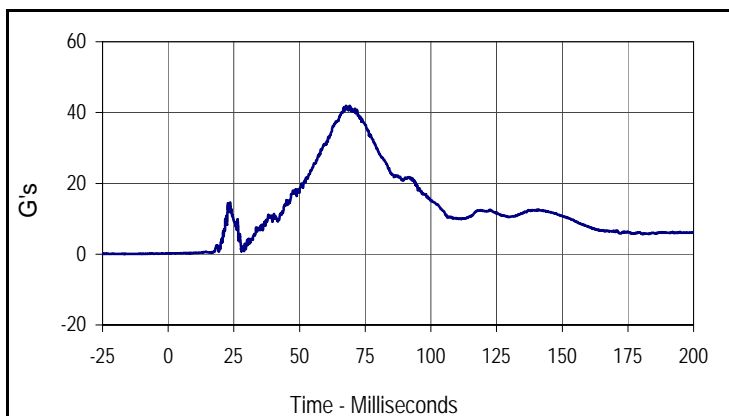
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Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
17.8	243.3	-41.8	67.7



Curve Description			
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Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.6	24.2	-3.7	23.1



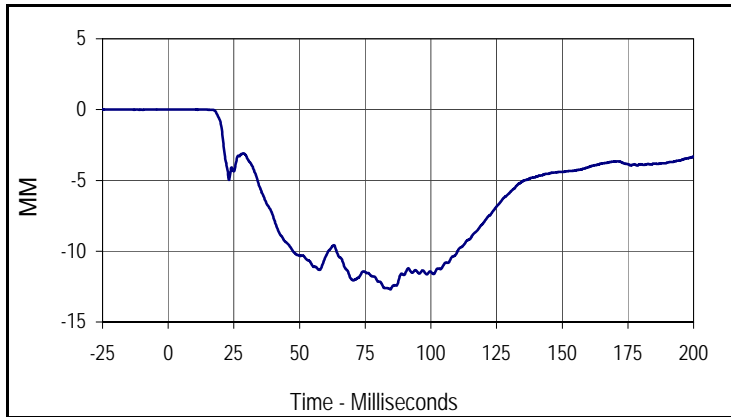
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.1	23.6	-2.5	18.4



Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
42.0	67.7	0.2	0.8

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

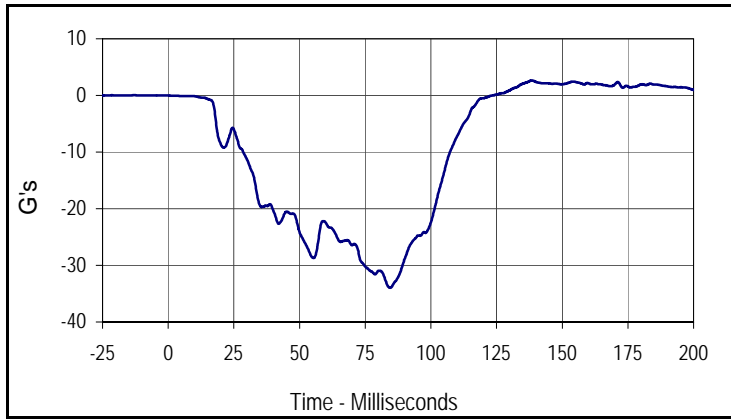
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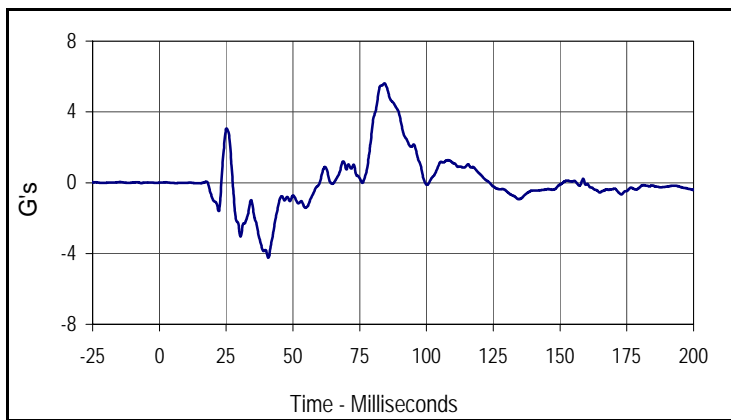
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Driver Chest Deflection			
Plot No.	Type	SAE Class	Units
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Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

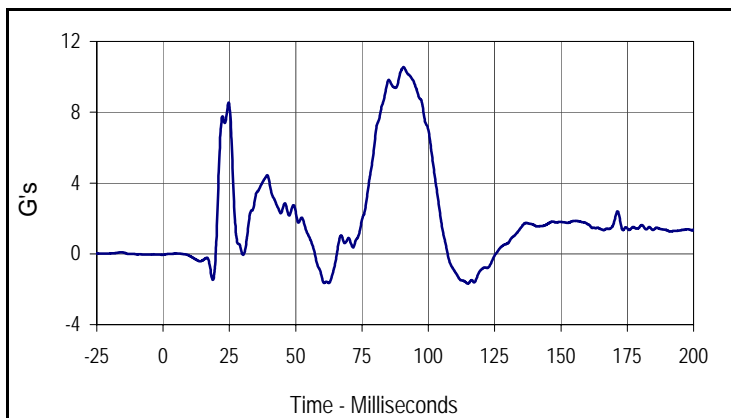
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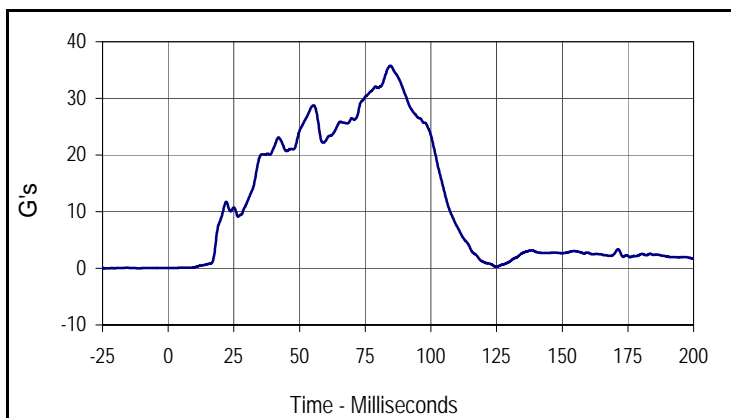
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Driver Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
4.5	295.2	-34.0	84.6



Curve Description			
Driver Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
5.6	84.2	-4.2	40.8



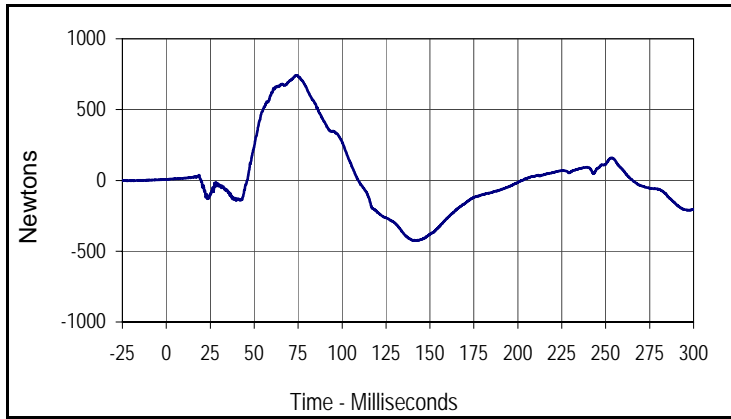
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Max	Time	Min	Time
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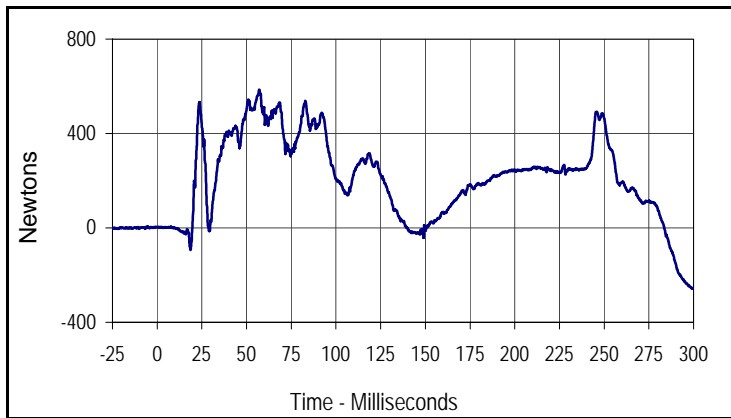
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Driver Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
009	RES	180	G's
Max	Time	Min	Time
35.8	84.7	0.1	0.3

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

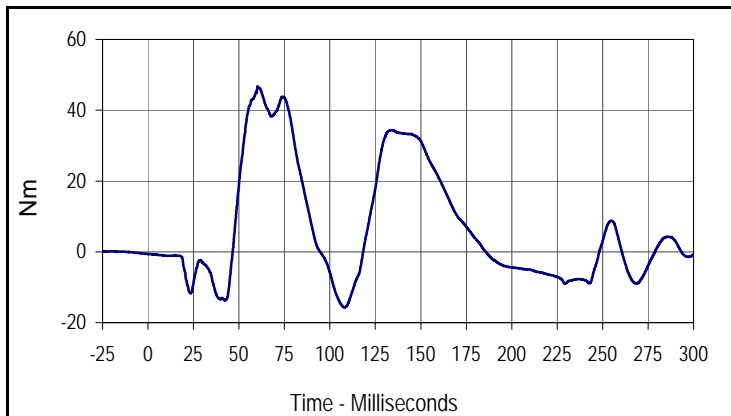
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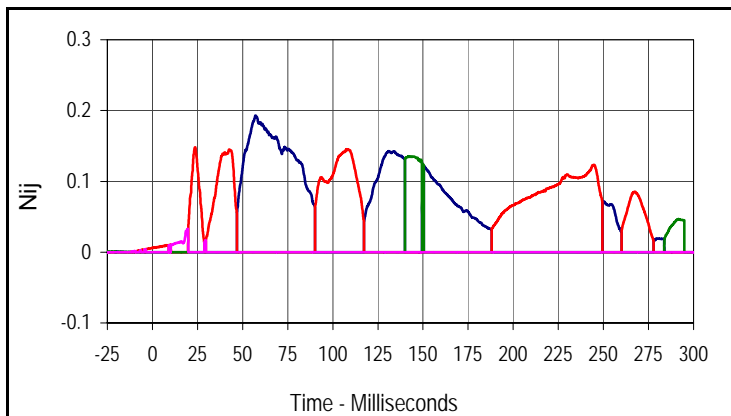
Curve Description			
Driver Upper Neck Force X			
Plot No.	Type	SAE Class	Units
010	FIL	1000	Newtons
Max	Time	Min	Time
742.5	74.6	-425.6	142.0



Curve Description			
Driver Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
011	FIL	1000	Newtons
Max	Time	Min	Time
585.2	57.1	-257.7	299.9



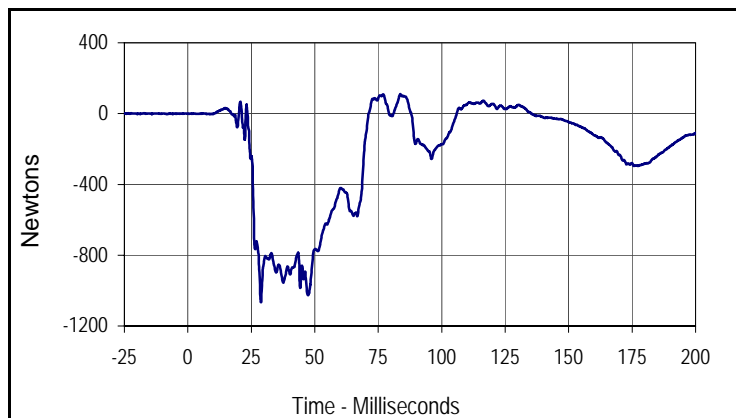
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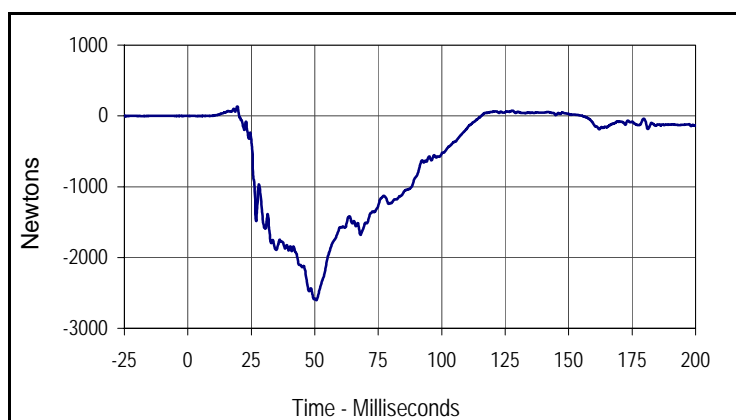
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Driver Nij			
Units	Type	Max	Time
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Nte	FIL	0.15	23.7
Ncf	FIL	0.14	142.2
Nce	FIL	0.03	19.7

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: M20150219  
 Test Date: 1/6/15



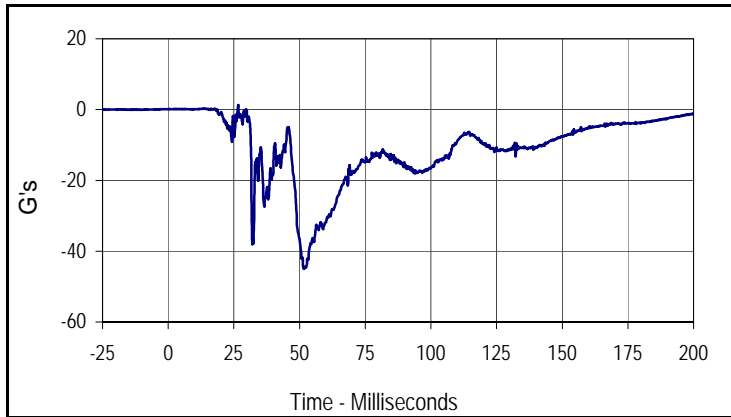
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Max	Time	Min	Time
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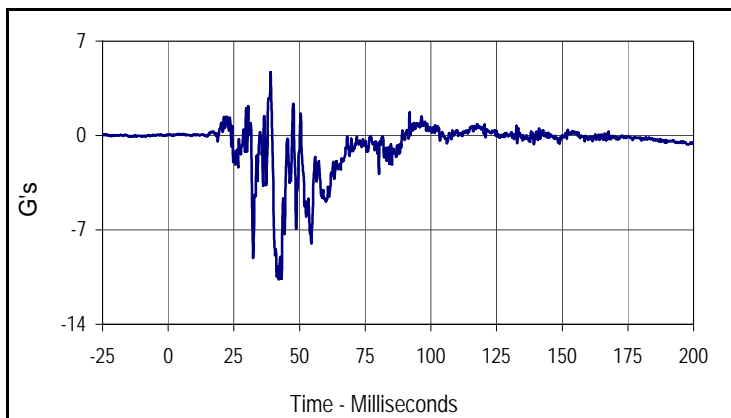
Curve Description			
Driver Right Femur Force Z			
Plot No.	Type	SAE Class	Units
014	FIL	600	Newtons
Max	Time	Min	Time
133.9	19.5	-2602.9	50.6

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

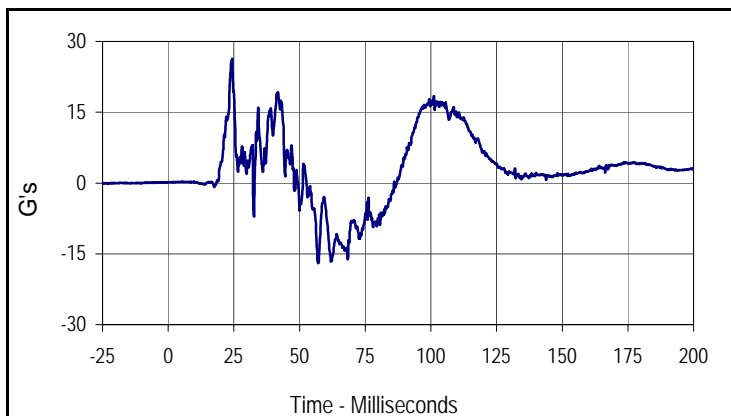
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 Test Date: 1/6/15



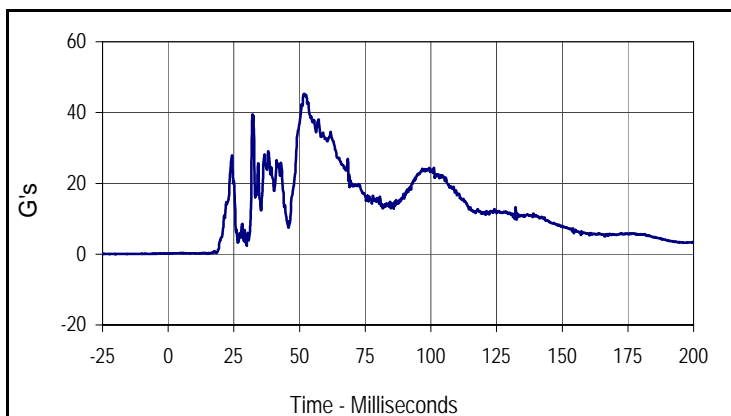
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Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
1.3	26.6	-45.0	51.7



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
4.7	39.0	-10.7	42.1



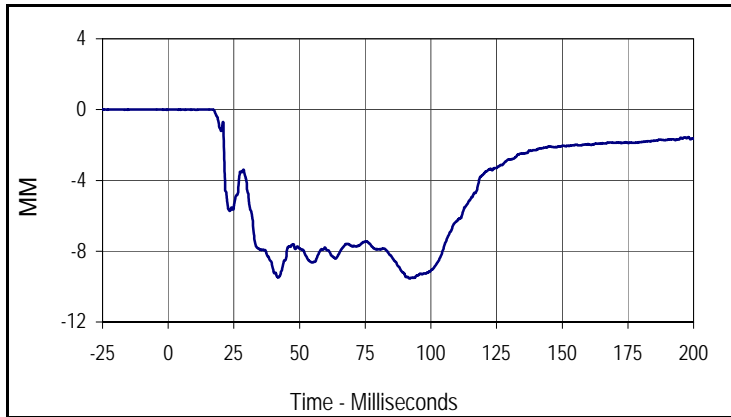
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
017	FIL	1000	G's
Max	Time	Min	Time
26.4	24.3	-17.0	57.1



Curve Description			
Passenger Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
018	RES	1000	G's
Max	Time	Min	Time
45.3	51.7	0.1	14.9

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

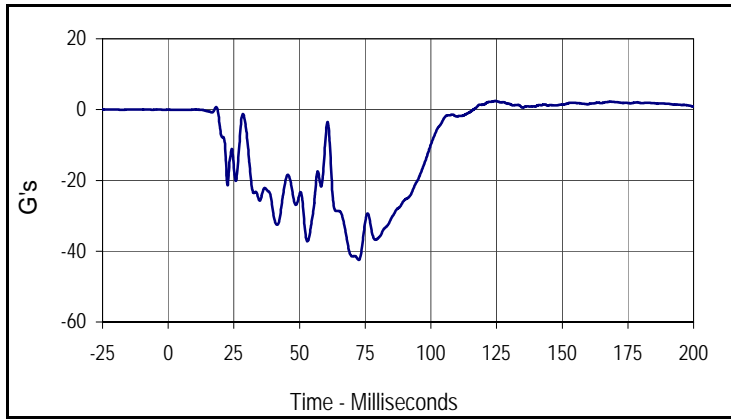
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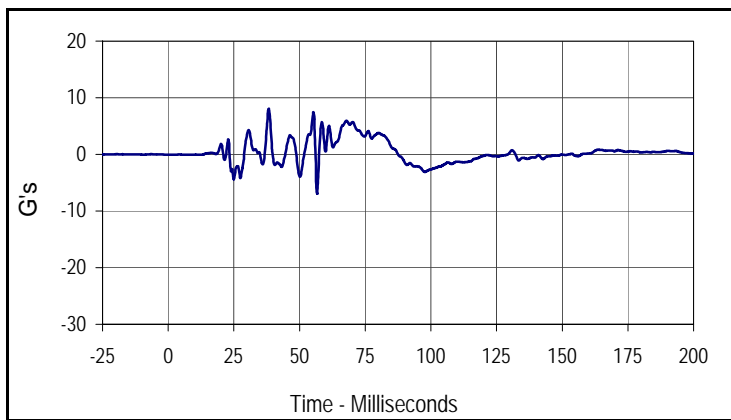
Curve Description			
Passenger Chest Deflection			
Plot No.	Type	SAE Class	Units
019	FIL	600	MM
Max	Time	Min	Time
0.0	16.4	-9.5	91.8

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

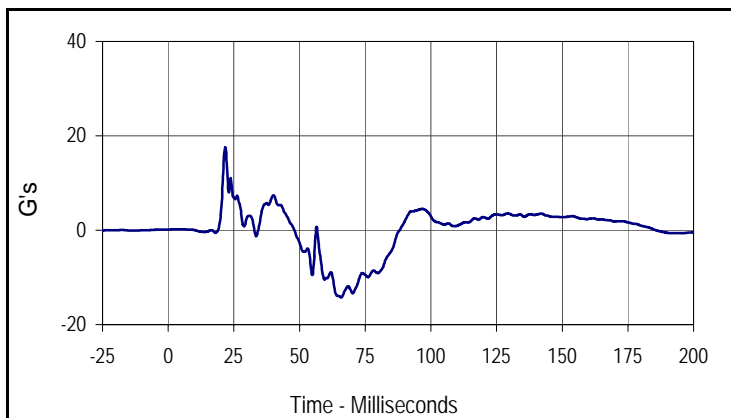
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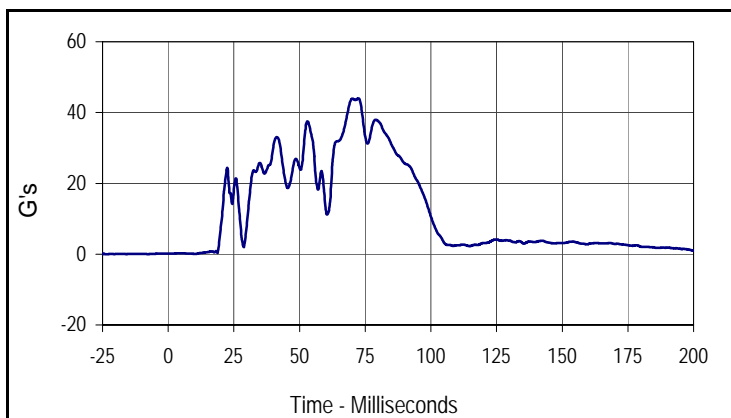
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Passenger Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
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Curve Description			
Passenger Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
8.1	38.3	-7.0	56.7



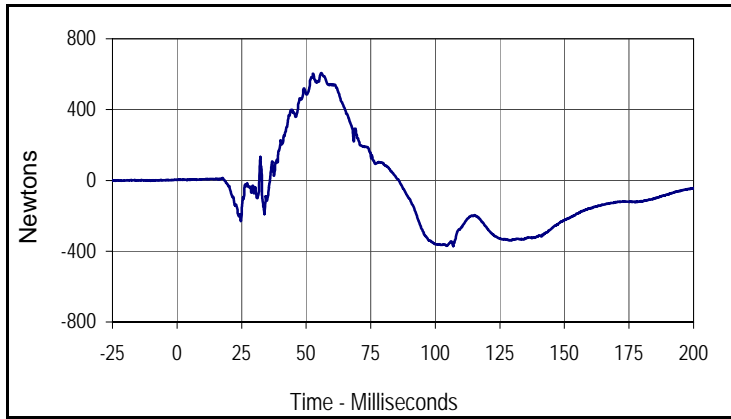
Curve Description			
Passenger Chest Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
022	FIL	180	G's
Max	Time	Min	Time
17.6	21.7	-14.2	65.9



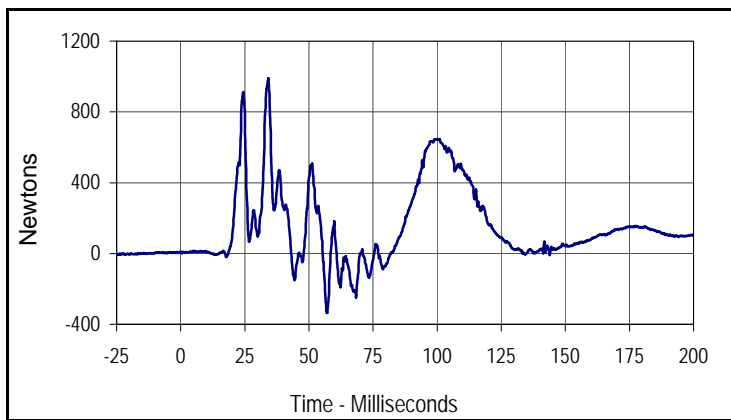
Curve Description			
Passenger Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
023	RES	180	G's
Max	Time	Min	Time
44.0	72.4	0.0	10.3

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

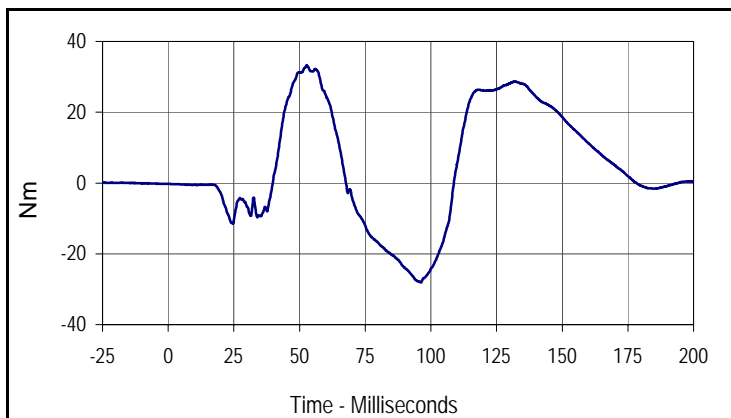
NHTSA No.: M20150219  
 Test Date: 1/6/15



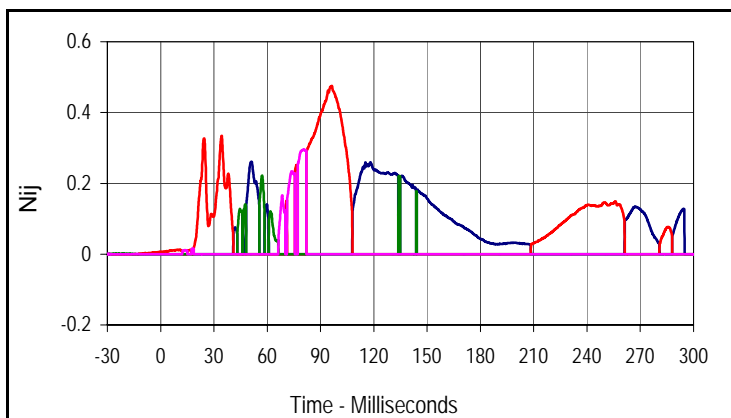
Curve Description			
Passenger Upper Neck Force X			
Plot No.	Type	SAE Class	Units
024	FIL	1000	Newtons
Max	Time	Min	Time
607.4	55.9	-371.5	106.9



Curve Description			
Passenger Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
025	FIL	1000	Newtons
Max	Time	Min	Time
990.5	34.1	-336.1	57.1



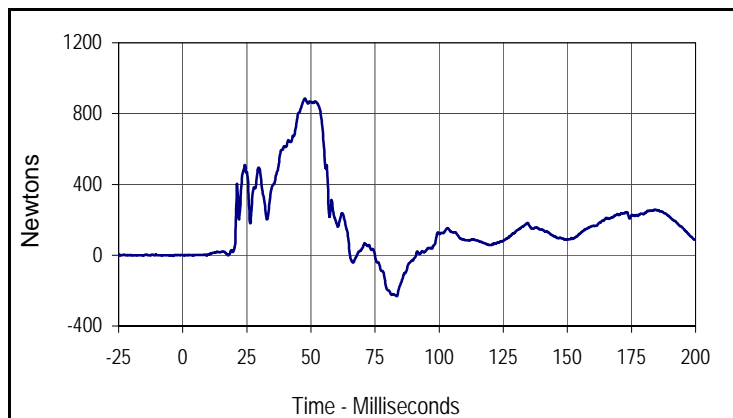
Curve Description			
Passenger Upper Neck Moment Y			
Plot No.	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
33.3	52.7	-28.1	96.2



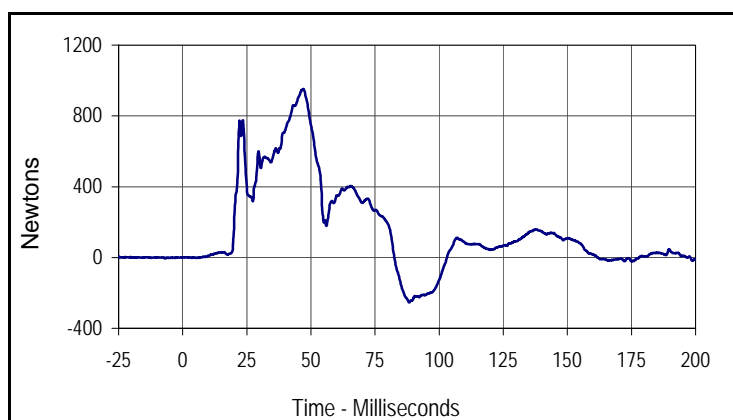
Curve Description			
Passenger Nij			
Units	Type	Max	Time
Ntf	FIL	0.26	51.3
Units	Type	Max	Time
Nte	FIL	0.48	96.3
Units	Type	Max	Time
Ncf	FIL	0.22	57.1
Units	Type	Max	Time
Nce	FIL	0.30	80.7

Test Vehicle: 2015 Ford Mustang 2-Door Coupe  
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: M20150219  
 Test Date: 1/6/15



Curve Description			
Passenger Left Femur Force Z			
Plot No.	Type	SAE Class	Units
027	FIL	600	Newtons
Max	Time	Min	Time
885.4	47.6	-232.7	83.5



Curve Description			
Passenger Right Femur Force Z			
Plot No.	Type	SAE Class	Units
028	FIL	600	Newtons
Max	Time	Min	Time
952.0	47.0	-253.8	88.3

**APPENDIX C**  
**DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA**

**APPENDIX C**  
**PRE-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

Test Program: Hybrid III 50th Percentile Male Dummy Damage Checklist

Test Date: 12/15/14



ATD Serial No.: 360

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on or replacement of parts:

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Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 12/15/14

ATD Serial No.: 360

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	29.5	Pass
A - Total sitting height	mm	879 to 889	886	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - H point height	mm	84 to 89	86	Pass
D - H point location from backline	mm	135 to 140	139	Pass
E - Shoulder pivot from backline	mm	84 to 94	91	Pass
F - Thigh clearance	mm	140 to 155	147	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	298	Pass
H - Head back to backline	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	337	Pass
J - Elbow rest height	mm	190 to 211	205	Pass
K - Buttock to knee length	mm	579 to 604	587	Pass
L - Popliteal length	mm	429 to 455	437	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	473	Pass
O - Chest depth without jacket	mm	213 to 229	227	Pass
P - Foot length	mm	251 to 267	263	Pass
V - Shoulder breadth	mm	422 to 437	436	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference (with chest jacket)	mm	970 to 1001	982	Pass
Z - Waist circumference	mm	836 to 866	865	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	231	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop Test

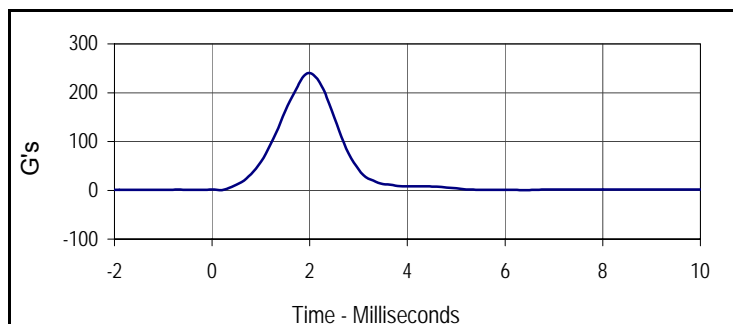
Test Date: 12/15/14



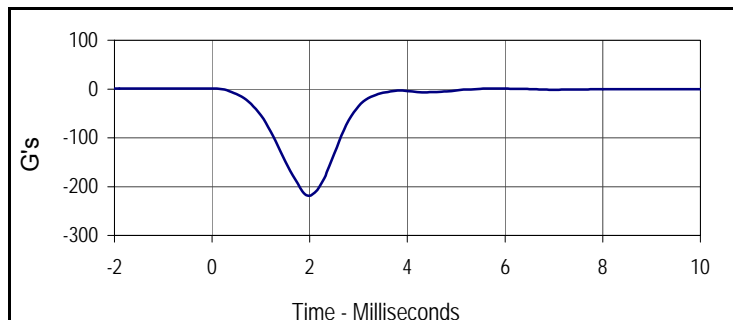
ATD Serial No.: 360

Test I.D.: M360HD005

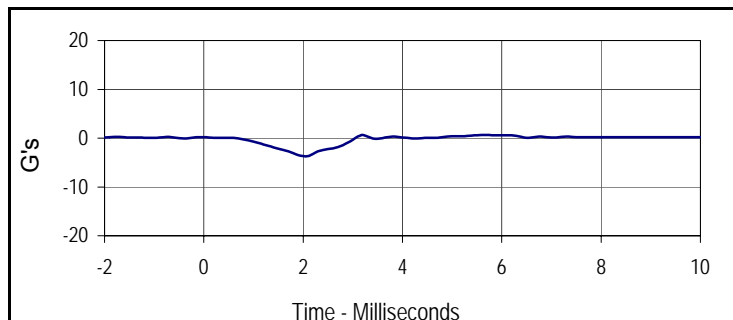
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	311	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	23.4	Pass
	Min		23.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	23.3	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	240.3	Pass
Peak Lateral Acceleration	G's	≤15.0	3.7	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	3.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



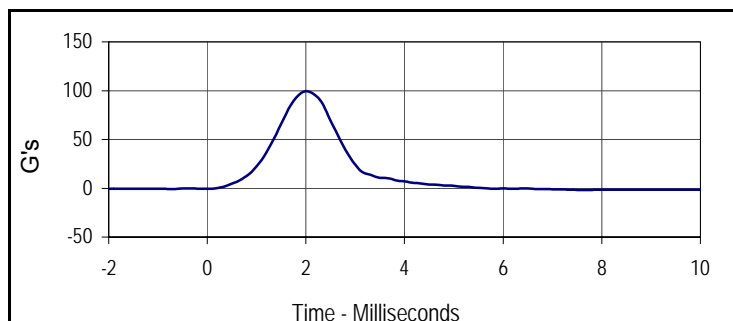
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
240.3	2.0	0.2	0.2



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.2	0.0	-218.7	2.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
0.7	5.6	-3.7	2.0



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
99.5	2.0	-0.7	-0.8

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

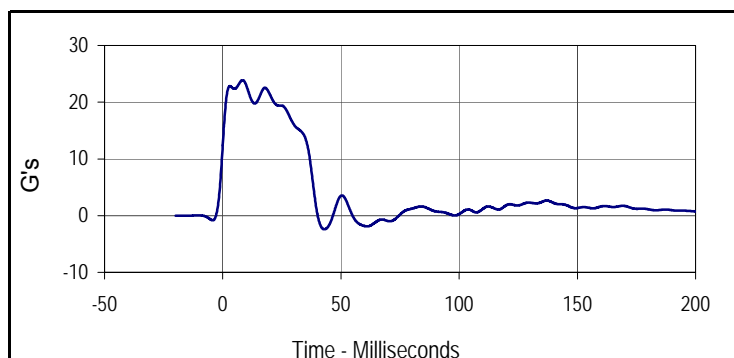
Test Date: 12/15/14



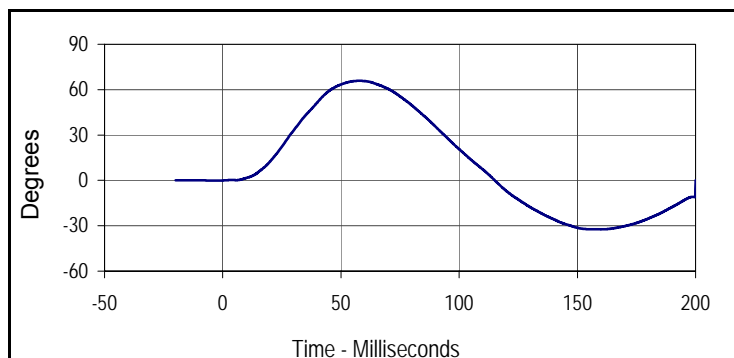
ATD Serial No.: 360

Test I.D.: M360NF005

Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	376	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	23.4	Pass	
	Min		23.1	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	23.4	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.91	Pass	
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.9	Pass
	20 Msec.	G's	17.6 to 22.6	21.3	Pass
	30 Msec.	G's	12.5 to 18.5	16.1	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	16.1	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	38.4	Pass	
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	65.8	Pass
	Time	Msec.	57.0 to 64.0	57.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	115.1	Pass	
Moment About Occ. Condyle	Max	Nm	88.1 to 108.5	101.0	Pass
	Time	Msec.	47.0 to 58.0	50.1	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	99.4	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.9	8.4	-2.4	43.0



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
65.8	57.7	-32.3	157.4



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
101.0	50.1	-21.1	12.9

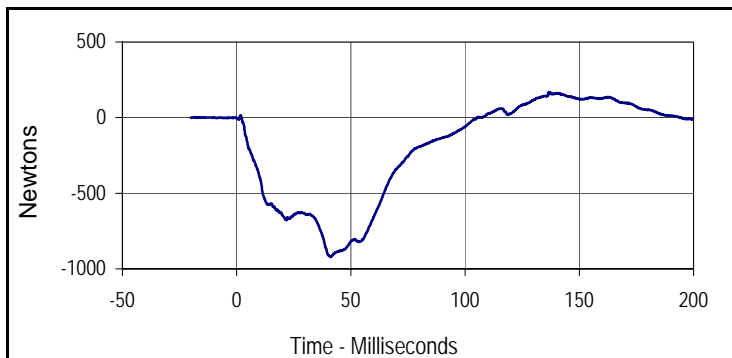
Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

Test Date: 12/15/14

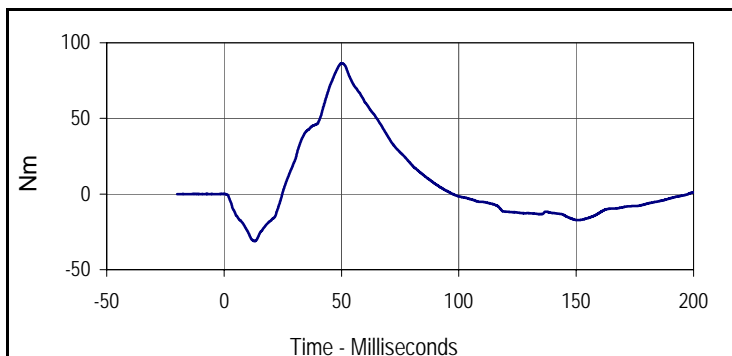


ATD Serial No.: 360

Test I.D.: M360NF005



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
166.1	136.5	-921.6	41.2



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
86.5	50.2	-31.1	13.1

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

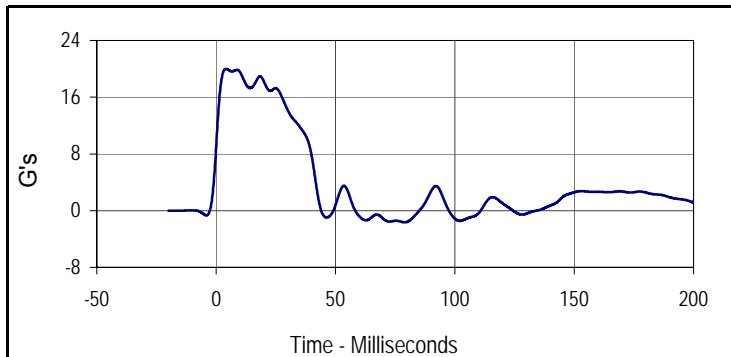
Test Date: 12/15/14



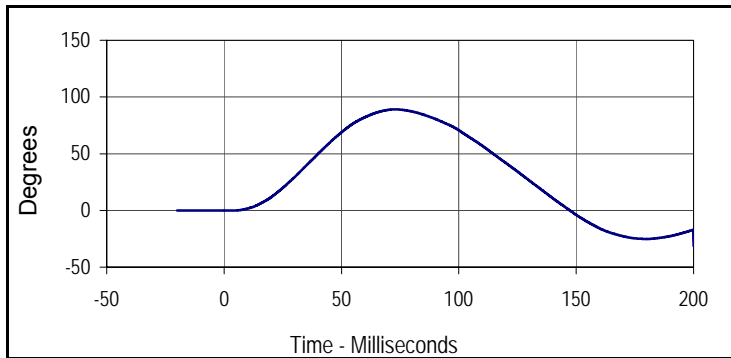
ATD Serial No.: 360

Test I.D.: M360NE005

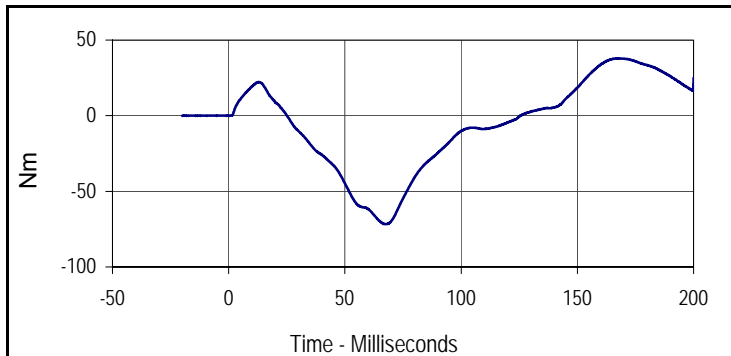
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	421	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	23.4	Pass	
	Min		23.1	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	23.4	Pass	
Pendulum Velocity	m/s	5.94 to 6.19	5.95	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.5	Pass
	20 Msec.	G's	14.0 to 19.0	18.2	Pass
	30 Msec.	G's	11.0 to 16.0	14.1	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	14.1	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	41.3	Pass	
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	89.1	Pass
	Time	Msec.	72.0 to 82.0	72.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	147.4	Pass	
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-71.7	Pass
	Time	Msec.	65.0 to 79.0	67.1	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	125.6	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
20.0	4.1	-1.6	79.0



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
89.1	72.8	-31.3	200.0



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
37.9	166.9	-71.7	67.1

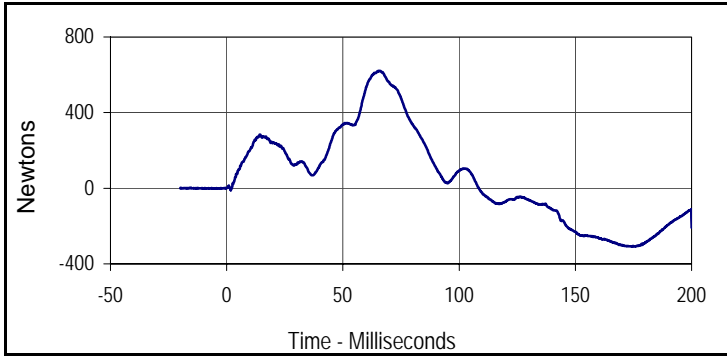
Test Program: Hybrid III 50th Percentile Male Neck Extension Test

Test Date: 12/15/14

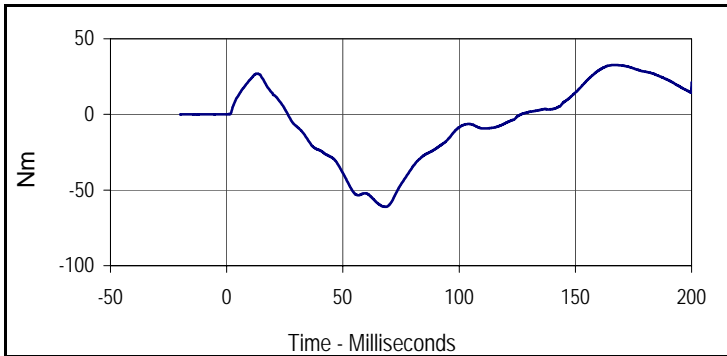


ATD Serial No.: 360

Test I.D.: M360NE005



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
620.5	66.1	-309.4	174.4



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
32.7	167.0	-61.2	68.3

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

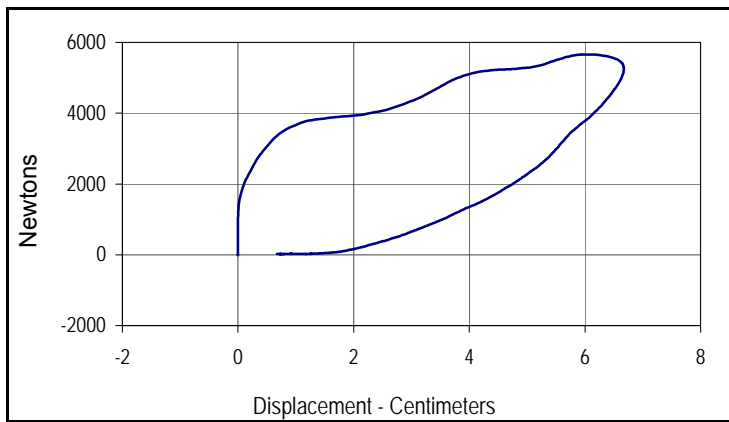
Test Date: 12/15/14



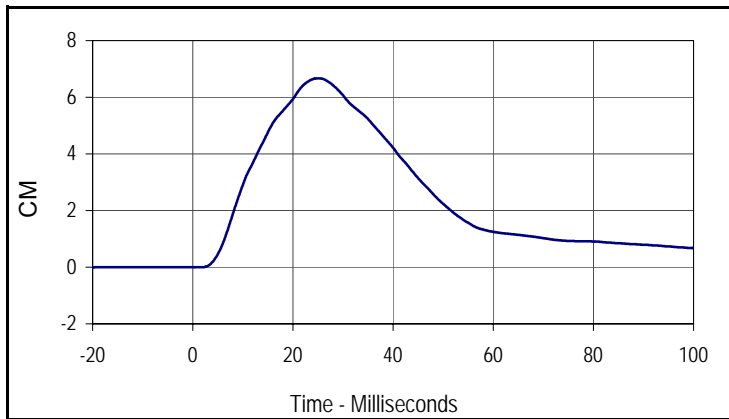
ATD Serial No.: 360

Test I.D.: M360CH005

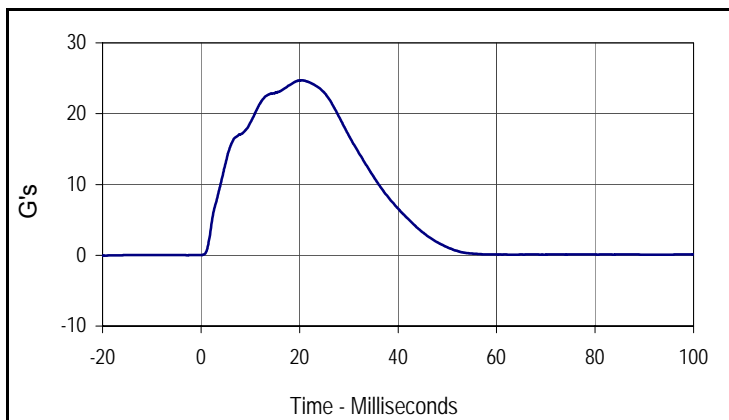
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	496	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	23.4	Pass
	Min		23.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	23.3	Pass
Probe Velocity	m/s	6.58 to 6.82	6.73	Pass
Peak Probe Force	Newtons	5159 to 5893	5657	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.67	Pass
Internal Hysteresis	%	69 to 85	69.5	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	69.5
Peak Probe Force		Peak Chest Deflection	
5657		6.67	



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.7	25.1	0.0	1.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
24.7	20.6	0.0	-20.0

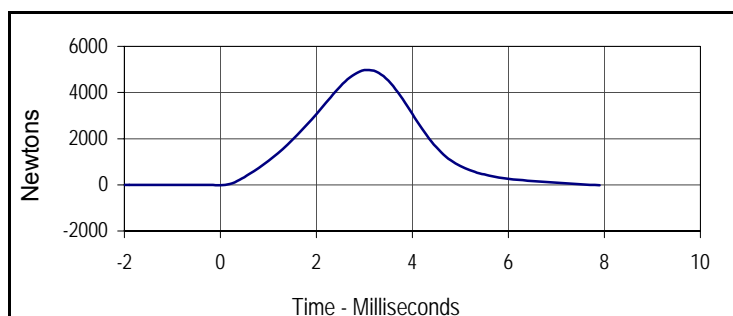


**Left Knee**

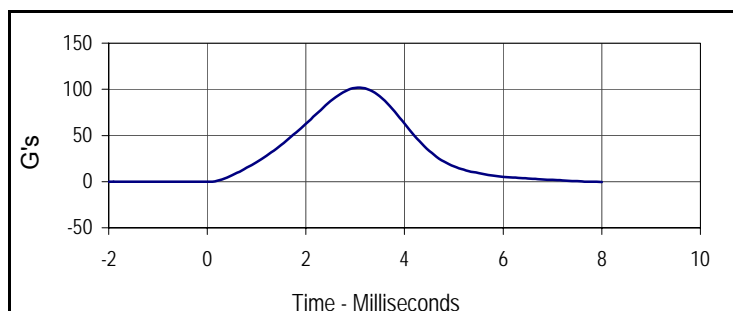
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	551	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	23.4	Pass
	Min		23.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	23.2	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	4980	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

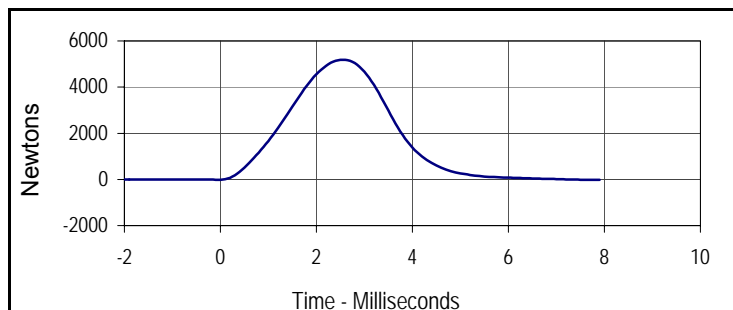
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5187	Pass
<b>Overall Test Results</b>				<b>Pass</b>



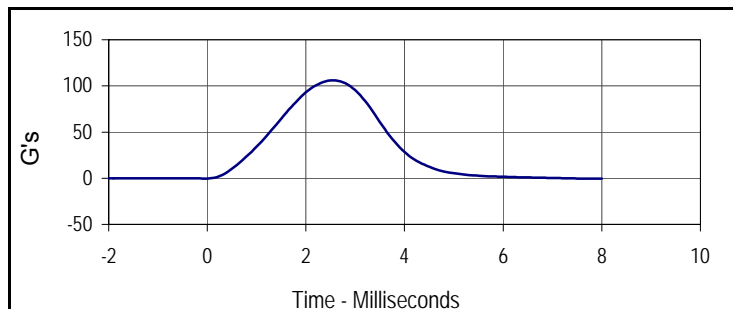
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4980.3	3.1	-12.4	7.9



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
101.8	3.1	-0.6	0.0



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5187.4	2.6	-17.0	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
106.0	2.6	-0.5	0.0

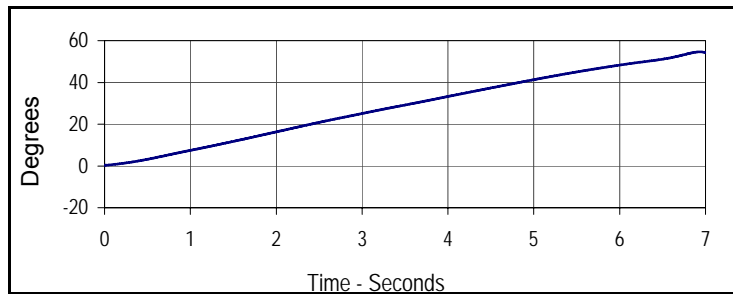


**Left Hip Joint-Femur Results**

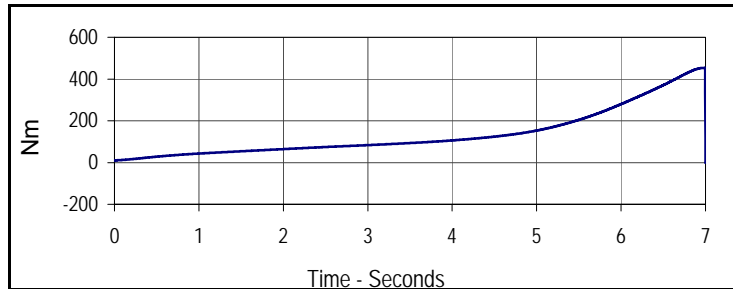
Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	626	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	23.4	Pass
	Min		23.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	23.3	Pass
Rotation Rate	deg/sec	5 to 10	7.9	Pass
Femur Torque at 30°	Nm	≤ 95	94.0	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	44.4	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Hip Joint-Femur Results**

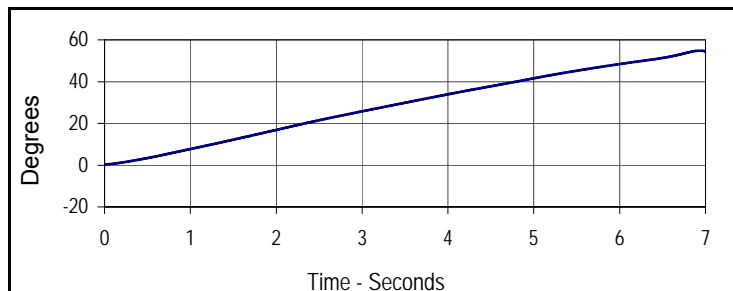
Rotation Rate	deg/sec	5 to 10	7.9	Pass
Femur Torque at 30°	Nm	≤ 95	85.2	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	43.6	Pass
<b>Overall Test Results</b>				<b>Pass</b>



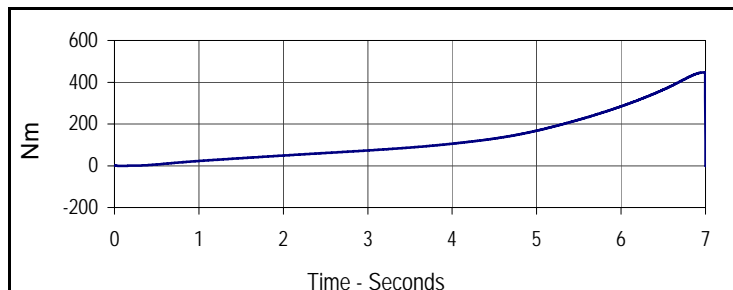
Curve Description			
Left Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
54.6	6.9	0.3	0.0



Curve Description			
Left Femur Torque			
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
453.2	7.0	0.3	0.0



Curve Description			
Right Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
54.8	6.9	0.3	0.0



Curve Description			
Right Femur Torque			
Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
447.3	7.0	0.3	0.0

Test Program: Hybrid III 5th Percentile Female Dummy Damage Checklist

Test Date: 11/18/14



ATD Serial No.: 141

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on or replacement of parts:

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Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 11/18/14



ATD Serial No.: 141

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.42	Pass
Laboratory Relative Humidity	%	10 to 70	31.3	Pass
A - Total sitting height	mm	774.7 to 800.1	786	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	450	Pass
C - H point height	mm	81.3 to 86.3	85	Pass
D - H point location from backline	mm	144.8 to 149.8	146	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	77	Pass
F - Thigh clearance	mm	119.4 to 134.6	126	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	250	Pass
H - Head back to backline	mm	40.7 to 45.7	44	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	285	Pass
J - Elbow rest height	mm	182.8 to 203.2	198	Pass
K - Buttock to knee length	mm	520.7 to 546.1	531	Pass
L - Popliteal length	mm	355.6 to 376.0	371	Pass
M - Knee pivot height	mm	393.7 to 419.1	402	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	186	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	473	Pass
S - Head Breadth	mm	137.1 to 147.3	144	Pass
T - Head Depth	mm	177.8 to 188.0	180	Pass
U - Hip Breadth	mm	299.7 to 314.9	302	Pass
V - Shoulder breadth	mm	350.5 to 365.7	359	Pass
W - Foot breadth	mm	78.8 to 94.0	90	Pass
X - Head circumference	mm	528.3 to 548.7	541	Pass
Y - Chest circumference (with chest jacket)	mm	850.8 to 881.3	864	Pass
Z - Waist circumference	mm	759.5 to 789.9	766	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	300	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	164	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop Test

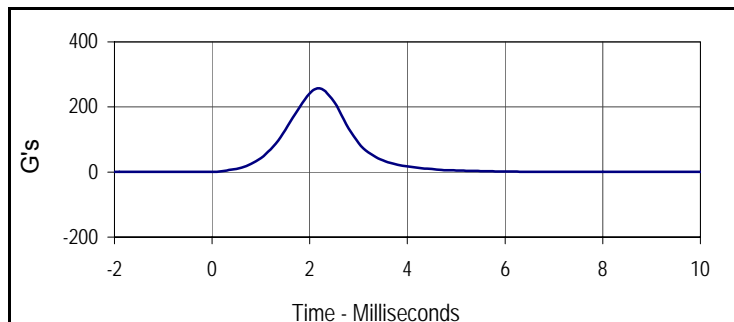
Test Date: 11/18/14



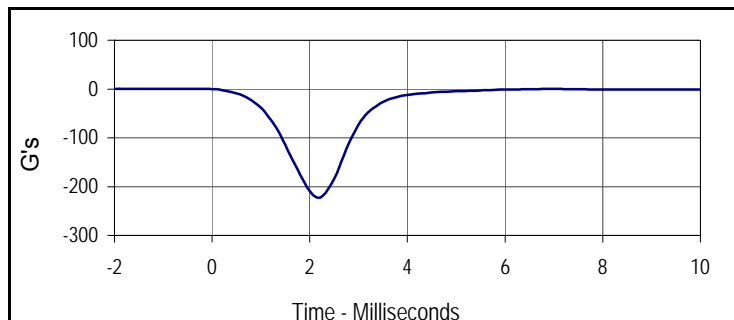
ATD Serial No.: 141

Test I.D.: F141HD064

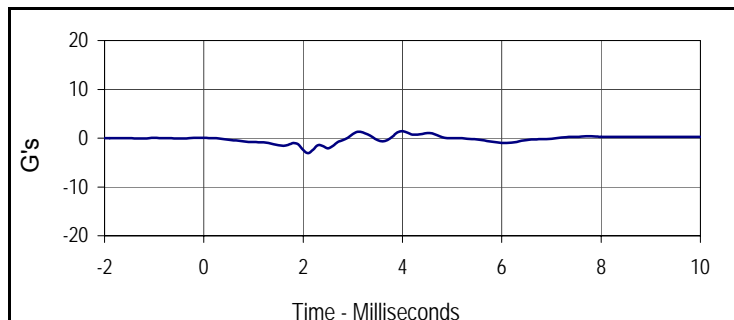
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	279	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	31.3	Pass
	Min		30.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	31.1	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	257.7	Pass
Peak Lateral Acceleration	G's	≤15.0	3.1	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	0.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
<b>Overall Test Results</b>				<b>Pass</b>



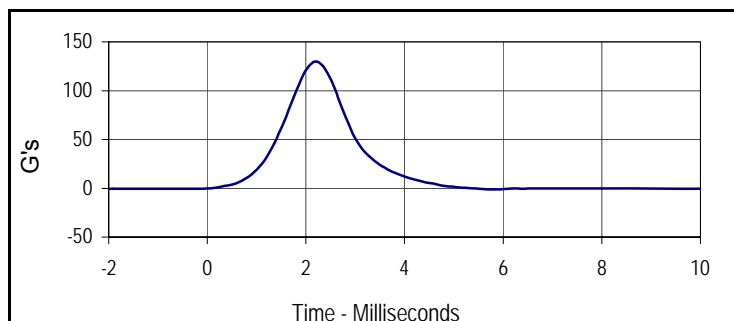
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
257.7	2.2	0.3	0.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.3	-0.7	-222.5	2.2



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
1.4	4.0	-3.1	2.1



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
130.0	2.2	-1.2	5.8

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

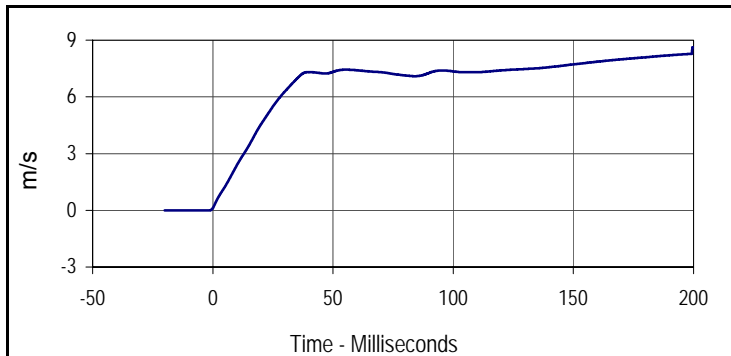
Test Date: 11/18/14



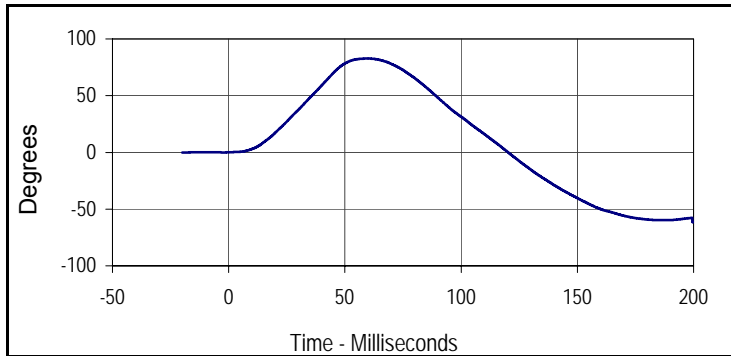
ATD Serial No.: 141

Test I.D.: F141NF064

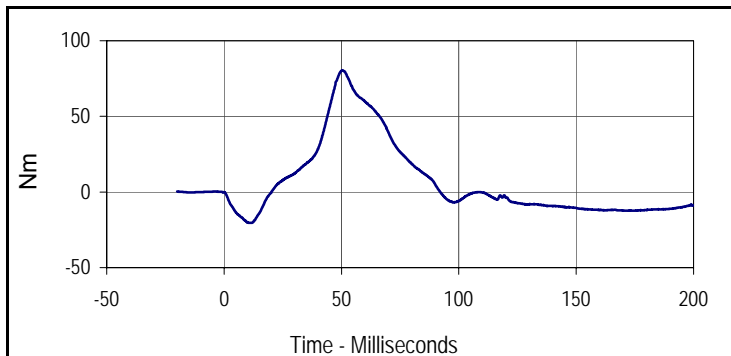
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	344	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.4	Pass	
Humidity During Soak	Max	10.0 to 70.0	31.3	Pass	
	Min		30.9	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	30.9	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.92	Pass	
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.4	Pass
	20 Msec.	m/s	4.0 to 5.0	4.5	Pass
	30 Msec.	m/s	5.8 to 7.0	6.3	Pass
"D" Plane Rotation	Max Degrees	77.0 to 91.0	82.8	Pass	
Peak Moment in Rotation	Max Nm	69.0 to 83.0	80.4	Pass	
Positive Moment Decay, Time To 10 Nm	Msec.	80.0 to 100.0	85.9	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
8.6	199.5	0.0	-1.5



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
82.8	59.7	-61.3	199.5



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
80.4	50.5	-20.5	11.0

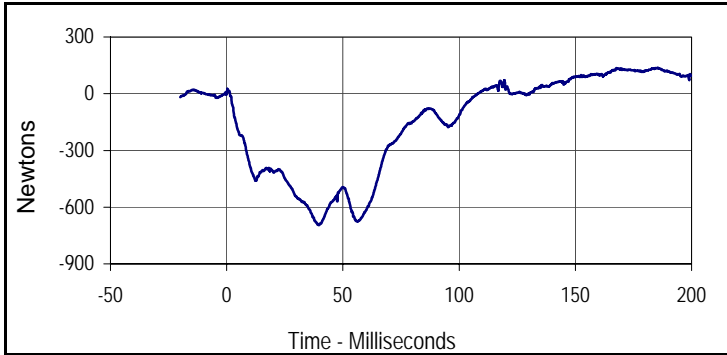
Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

Test Date: 11/18/14

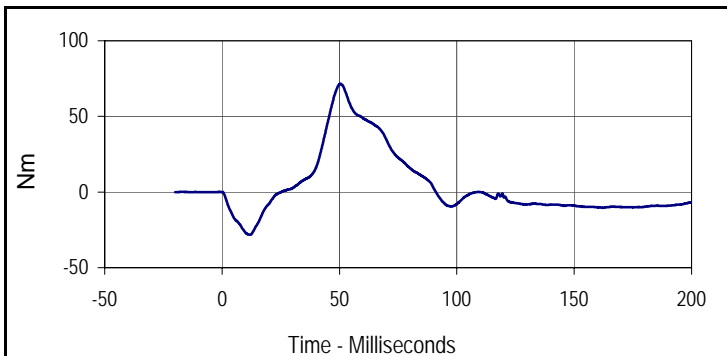


ATD Serial No.: 141

Test I.D.: F141NF064



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
138.3	185.3	-695.2	39.6



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
71.6	50.4	-28.3	11.9

Test Program: Hybrid III 5th Percentile Female Neck Extension Test

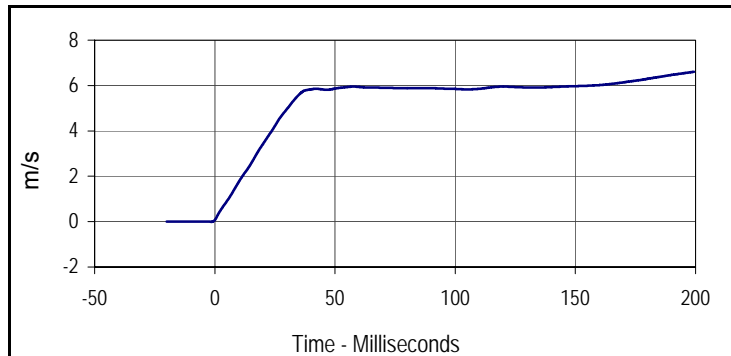
Test Date: 11/18/14



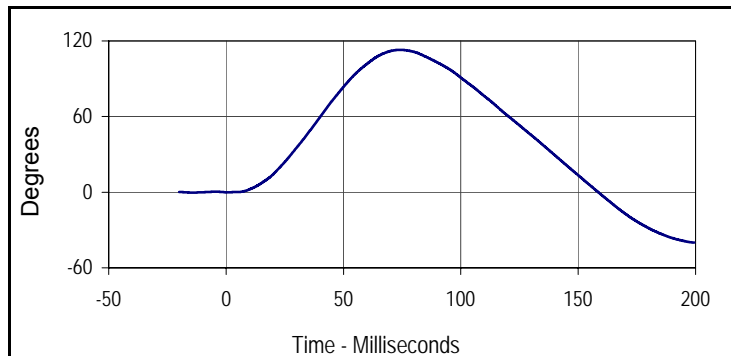
ATD Serial No.: 141

Test I.D.: F141NE064

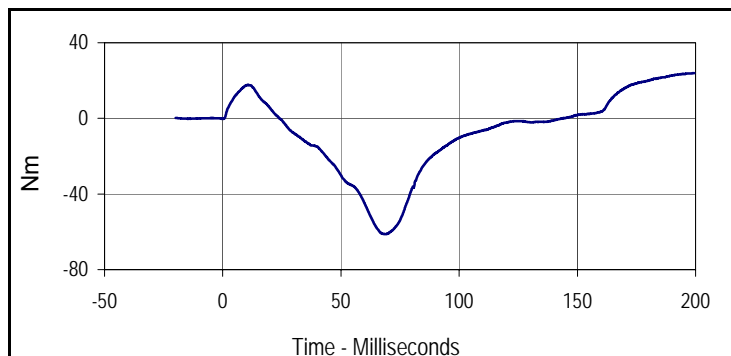
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	399	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.4	Pass	
Humidity During Soak	Max	10.0 to 70.0	31.3	Pass	
	Min		30.9	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	30.9	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	5.97	Pass	
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.8	Pass
	20 Msec.	m/s	3.1 to 3.9	3.4	Pass
	30 Msec.	m/s	4.6 to 5.6	5.0	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	112.9	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-61.3	Pass
Positive Moment Decay, Time To -10 Nm	Msec.	94.0 to 114.0	100.5	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
6.6	199.4	0.0	-1.3



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
112.9	74.0	-40.0	199.4



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
23.9	199.2	-61.3	68.3

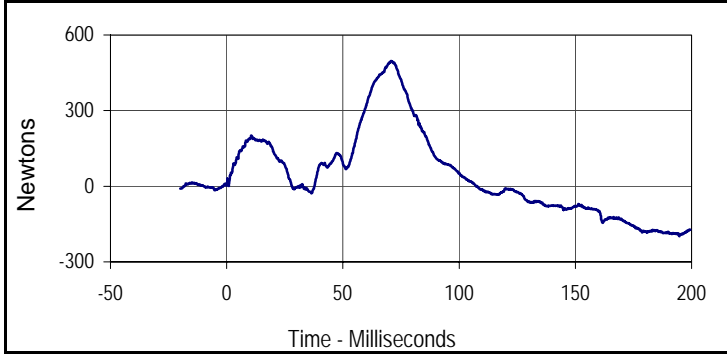
Test Program: Hybrid III 5th Percentile Female Neck Extension Test

Test Date: 11/18/14

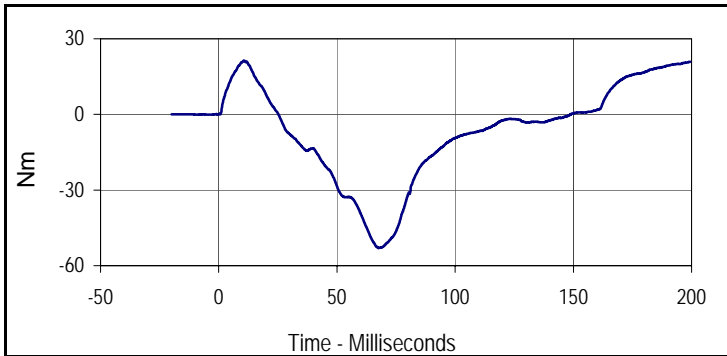


ATD Serial No.: 141

Test I.D.: F141NE064



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
496.6	70.8	-198.0	194.7



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
21.4	10.7	-53.0	67.6

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test

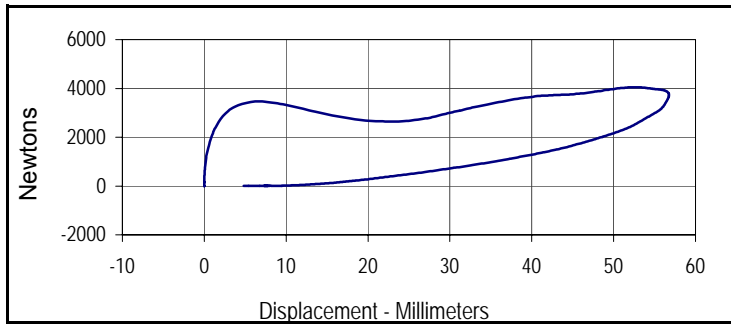
Test Date: 11/18/14



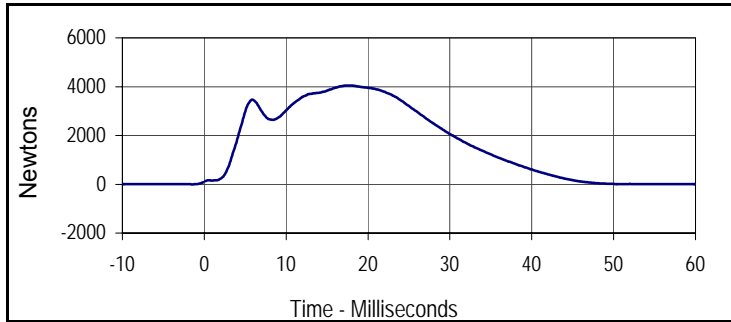
ATD Serial No.: 141

Test I.D.: F141CH064

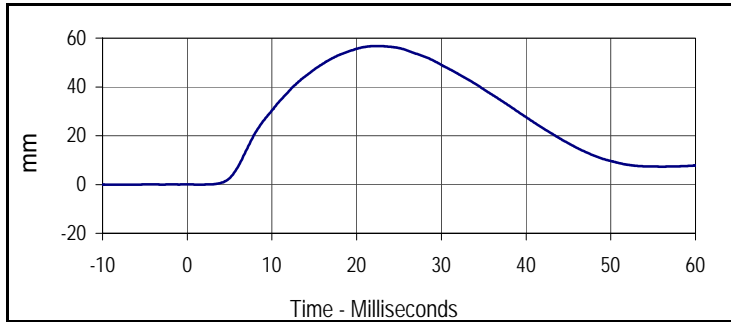
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	454	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	31.3	Pass
	Min		30.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	31.0	Pass
Probe Velocity	m/s	6.59 to 6.83	6.61	Pass
Peak Chest Deflection	mm	50.0 to 58.0	56.8	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	3982	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	4047	Pass
Internal Hysteresis	%	69 to 85	72.4	Pass
Overall Test Results				Pass



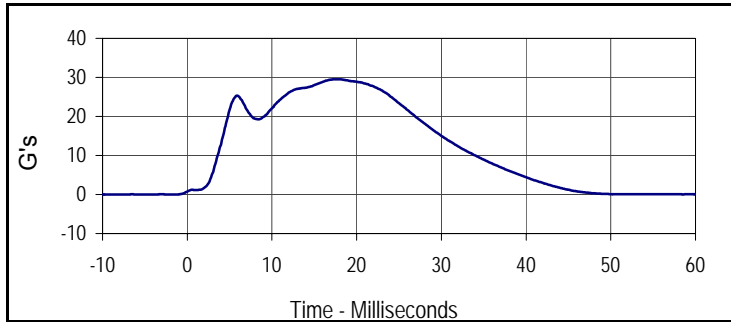
Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	72.4
Peak Probe Force		Peak Chest Deflection	
4047.4		56.8	



Curve Description			
Probe Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4047.4	17.5	-0.9	-1.4



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
003	FIL	180	mm
Max	Time	Min	Time
56.8	22.4	0.0	-10.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
29.5	17.5	0.0	-1.4

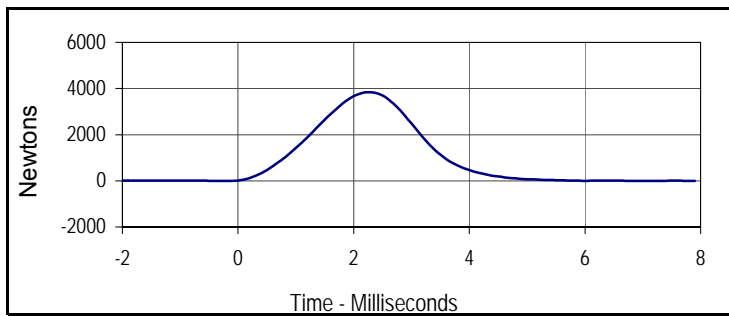


**Left Knee**

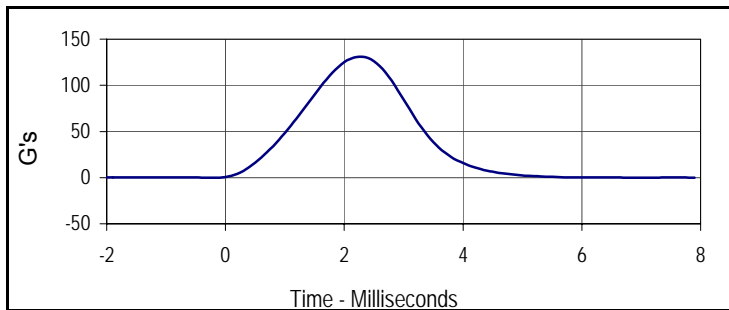
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	514	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	31.3	Pass
	Min		30.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	31.0	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force	Newtons	3450 to 4060	3841	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

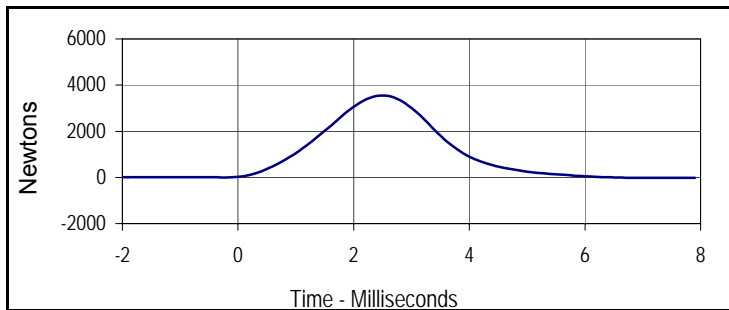
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	Newtons	3450 to 4060	3553	Pass
<b>Overall Test Results</b>				<b>Pass</b>



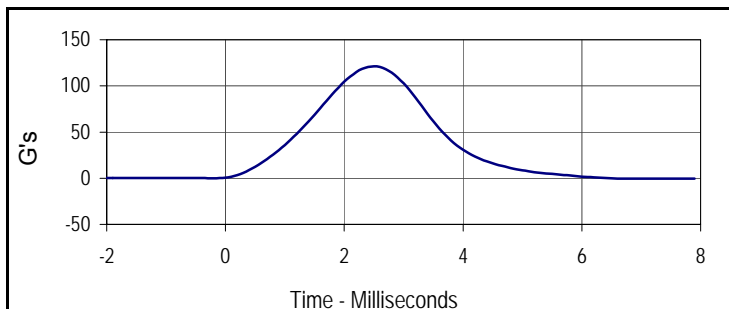
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3841.2	2.3	-5.2	7.0



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
131.0	2.3	-1.2	0.0



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3552.5	2.5	-16.4	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
121.2	2.5	-1.1	0.0

Test Program: Hybrid III 5th Percentile Female Torso Flexion Test

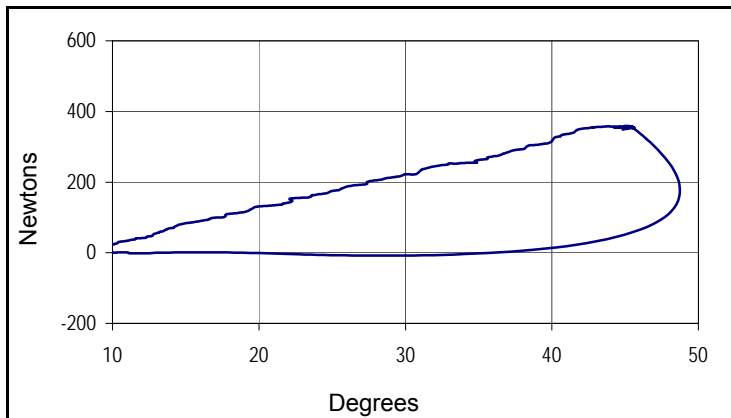
Test Date: 11/18/14



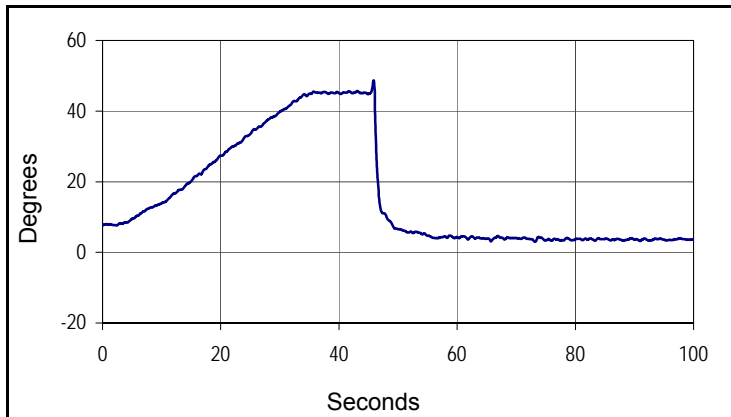
ATD Serial No.: 141

Test I.D.: TF064

Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	579	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.5	Pass
	Min	°C		21.4	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.3	Pass
	Min	%		30.9	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.9	Pass
Initial Reference Plane Angle		Degrees	≤ 20	7.7	Pass
Peak Force at 45° +/-0.5°		Newtons	320.0 to 390.0	358.7	Pass
Torso Rotation Rate		deg/sec	0.5 to 1.5	1.1	Pass
Final Reference Plane Angle		Degrees	+/-8	3.7	Pass
Overall Test Results					Pass



Curve Description		
Force vs Torso Rotation		
Plot No.	Type	Filter Freq
001	FIL	1 Hz
Peak Force		Peak Rotation
358.7		48.7



Curve Description			
Torso Rotation			
Plot No.	Type	Filter Freq	Units
002	FIL	1 Hz	Degrees
Max	Time	Min	Time
48.7	45.9	3.0	73.2

**APPENDIX C**  
**POST-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

Test Program: Hybrid III 50th Percentile Male Dummy Damage Checklist

Test Date: 1/7/15



ATD Serial No.: 360

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on or replacement of parts:

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Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 1/7/15

ATD Serial No.: 360

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	29.5	Pass
A - Total sitting height	mm	879 to 889	886	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - H point height	mm	84 to 89	86	Pass
D - H point location from backline	mm	135 to 140	139	Pass
E - Shoulder pivot from backline	mm	84 to 94	91	Pass
F - Thigh clearance	mm	140 to 155	147	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	298	Pass
H - Head back to backline	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	337	Pass
J - Elbow rest height	mm	190 to 211	205	Pass
K - Buttock to knee length	mm	579 to 604	587	Pass
L - Popliteal length	mm	429 to 455	437	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	473	Pass
O - Chest depth without jacket	mm	213 to 229	227	Pass
P - Foot length	mm	251 to 267	263	Pass
V - Shoulder breadth	mm	422 to 437	436	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference (with chest jacket)	mm	970 to 1001	982	Pass
Z - Waist circumference	mm	836 to 866	865	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	231	Pass
Overall Test Results			Pass	

Test Program: Hybrid III 50th Percentile Male Head Drop Test

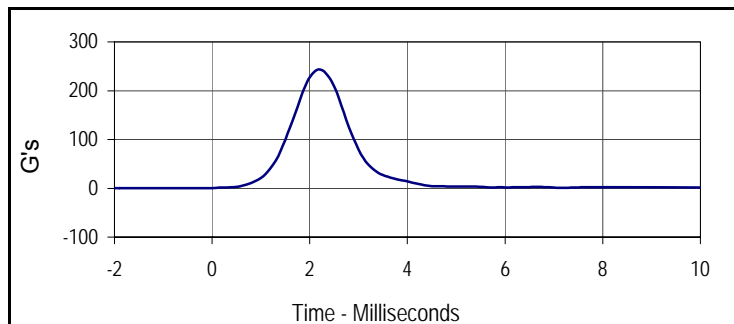
Test Date: 1/7/15



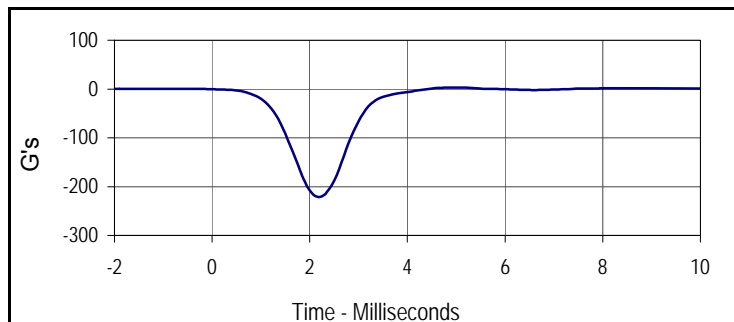
ATD Serial No.: 360

Test I.D.: M360HD006

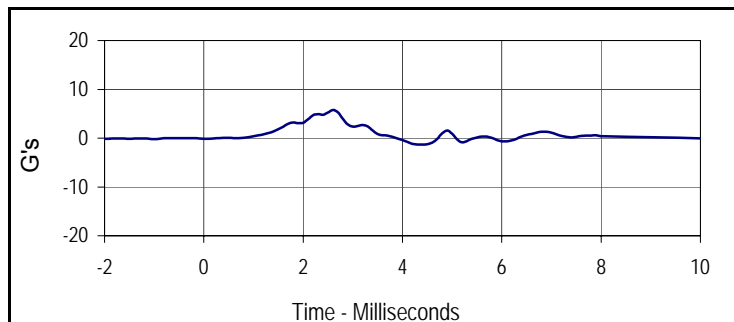
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	266	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.7	Pass
	Min		36.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.6	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	243.5	Pass
Peak Lateral Acceleration	G's	≤15.0	5.8	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	5.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
<b>Overall Test Results</b>				<b>Pass</b>



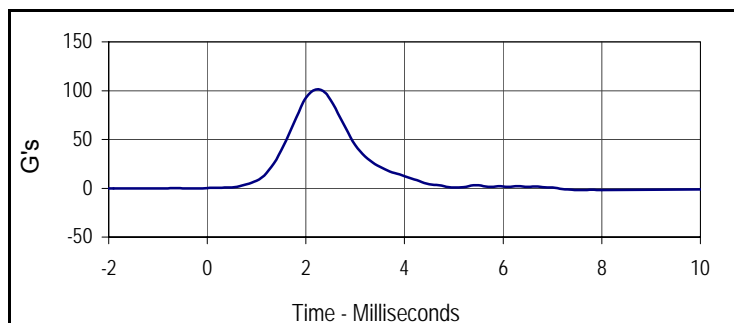
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
243.5	2.2	0.1	-0.1



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.2	5.1	-221.5	2.2



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
5.8	2.6	-1.3	4.3



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
101.0	2.2	-0.3	-1.2

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

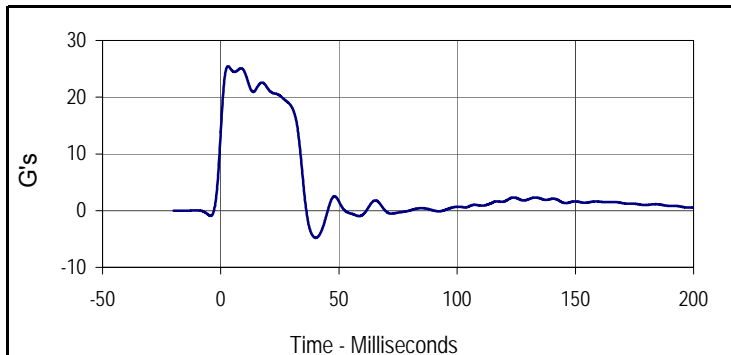
Test Date: 1/7/15



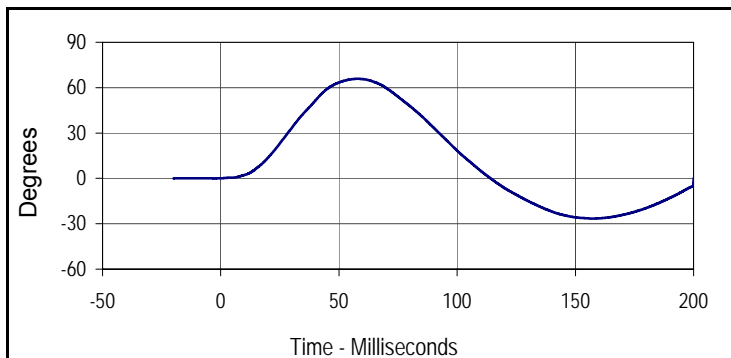
ATD Serial No.: 360

Test I.D.: M360NF006

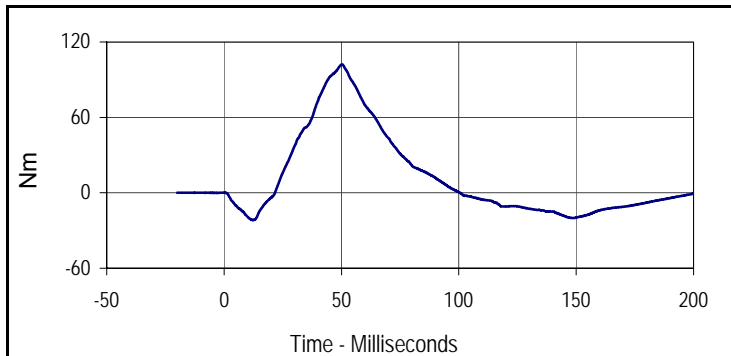
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	331	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	36.7	Pass	
	Min		36.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	7.00	Pass	
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.5	Pass
	20 Msec.	G's	17.6 to 22.6	21.5	Pass
	30 Msec.	G's	12.5 to 18.5	18.3	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	18.3	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	34.9	Pass	
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	65.8	Pass
	Time	Msec.	57.0 to 64.0	57.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	114.1	Pass	
Moment About Occ. Condyle	Max	Nm	88.1 to 108.5	102.2	Pass
	Time	Msec.	47.0 to 58.0	50.1	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	100.5	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
25.5	3.1	-4.8	40.2



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
65.8	57.9	-26.5	157.4



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
102.2	50.1	-21.7	12.3

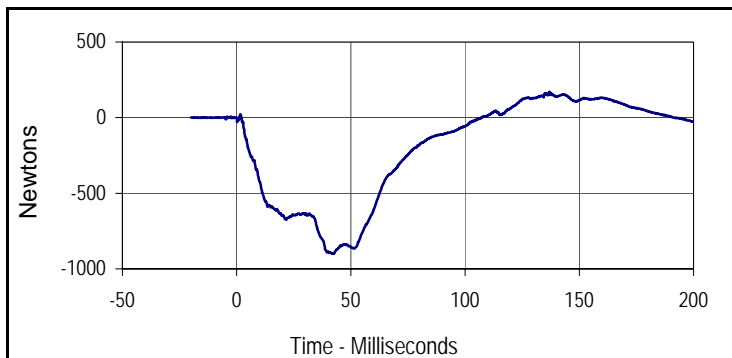
Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

Test Date: 1/7/15

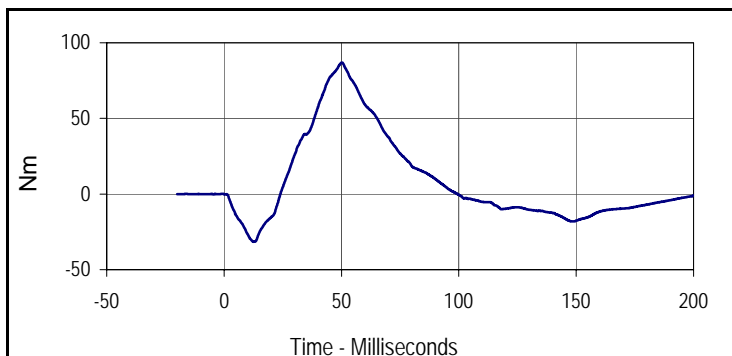


ATD Serial No.: 360

Test I.D.: M360NF006



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
169.7	136.8	-899.9	42.5



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
86.9	50.1	-31.5	12.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

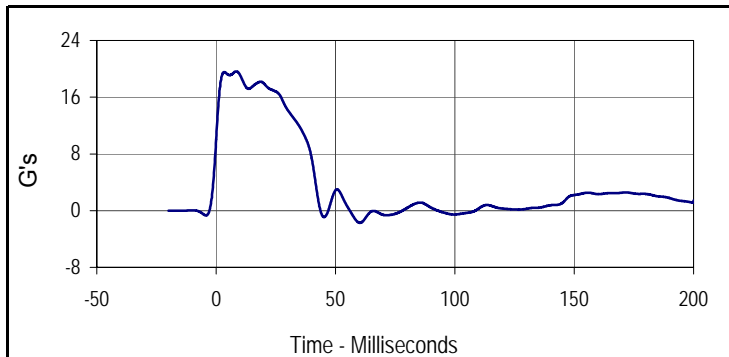
Test Date: 1/7/15



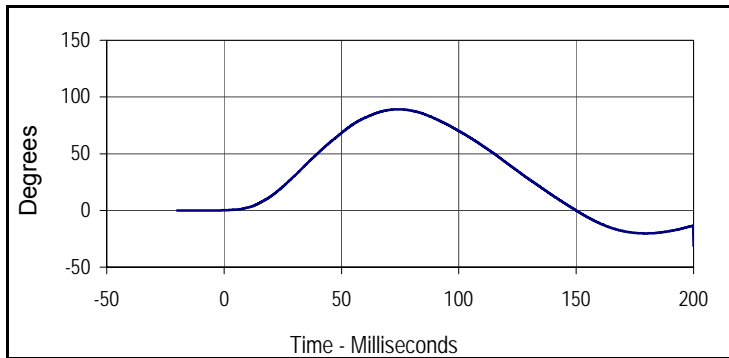
ATD Serial No.: 360

Test I.D.: M360NE006

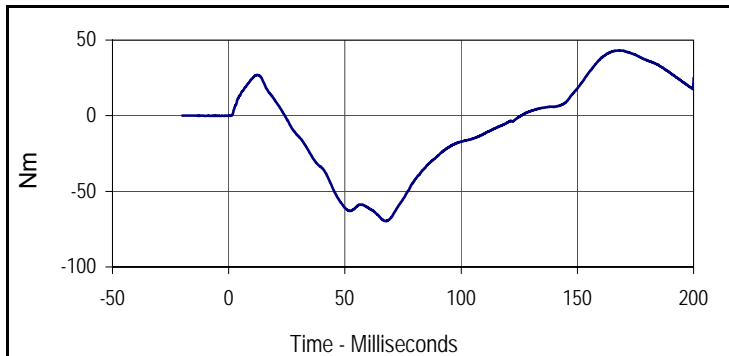
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	376	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	36.7	Pass	
	Min		36.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass	
Pendulum Velocity	m/s	5.94 to 6.19	6.06	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.1	Pass
	20 Msec.	G's	14.0 to 19.0	17.9	Pass
	30 Msec.	G's	11.0 to 16.0	14.2	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	14.2	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	41.2	Pass	
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	89.2	Pass
	Time	Msec.	72.0 to 82.0	74.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	150	Pass	
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-69.7	Pass
	Time	Msec.	65.0 to 79.0	67.8	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	125.9	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.6	8.4	-1.7	60.2



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
89.2	74.2	-31.3	200.0



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
43.2	168.2	-69.7	67.8

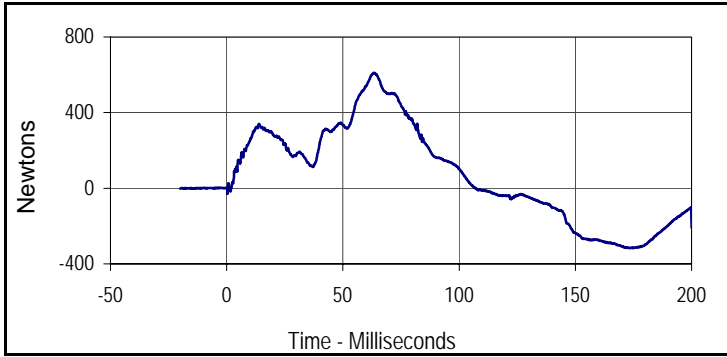
Test Program: Hybrid III 50th Percentile Male Neck Extension Test

Test Date: 1/7/15

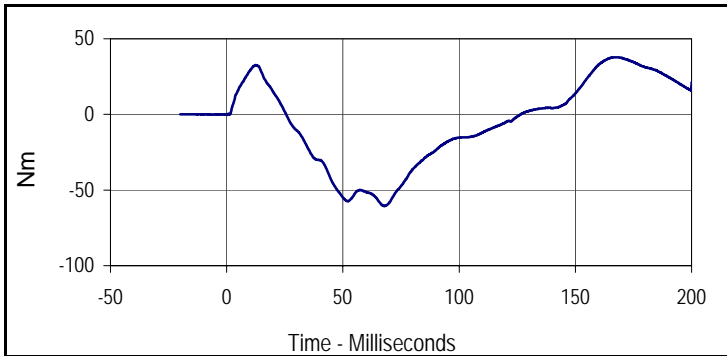


ATD Serial No.: 360

Test I.D.: M360NE006



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
611.0	63.3	-317.1	173.2



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
37.8	167.4	-60.6	67.9

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

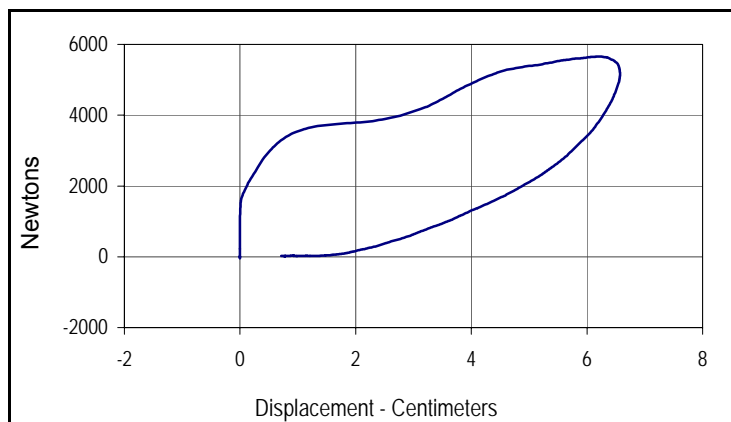
Test Date: 1/7/15



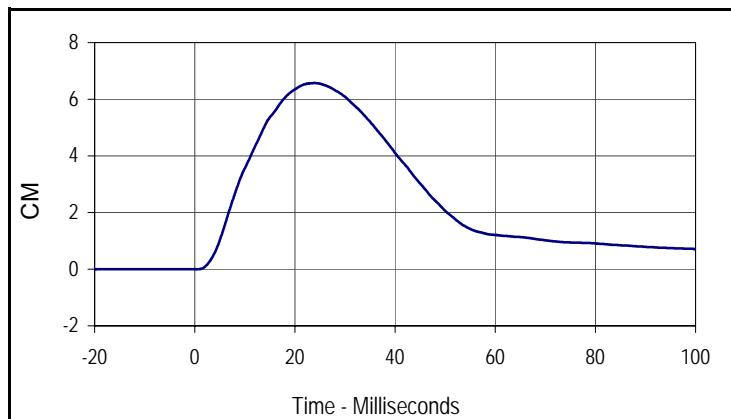
ATD Serial No.: 360

Test I.D.: M360CH006

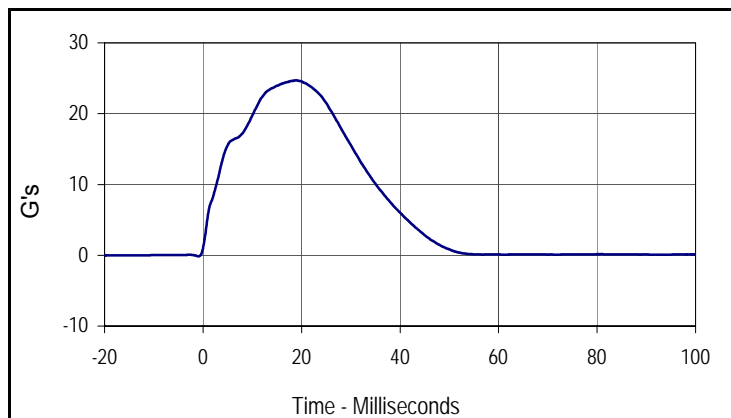
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	451	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.7	Pass
	Min		36.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.5	Pass
Probe Velocity	m/s	6.58 to 6.82	6.72	Pass
Peak Probe Force	Newtons	5159 to 5893	5660	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.57	Pass
Internal Hysteresis	%	69 to 85	71.9	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	71.9
Peak Probe Force		Peak Chest Deflection	
5660		6.57	



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.6	23.9	0.0	0.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
24.7	18.9	-0.1	-0.9

Test Program: Hybrid III 50th Percentile Male Knee Impact Test  
 ATD Serial No.: 360

Test Date: 1/7/15  
 Test I.D.: M360LK006\_M360RK006

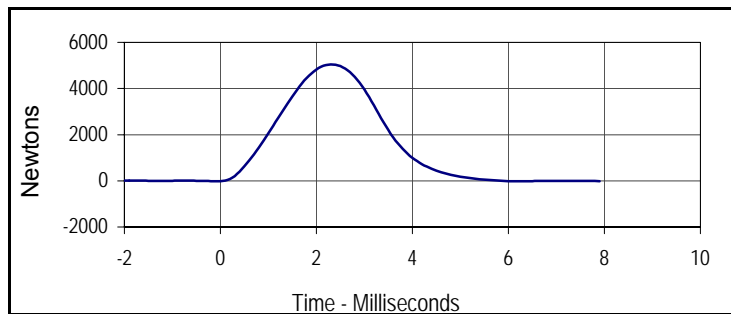


**Left Knee**

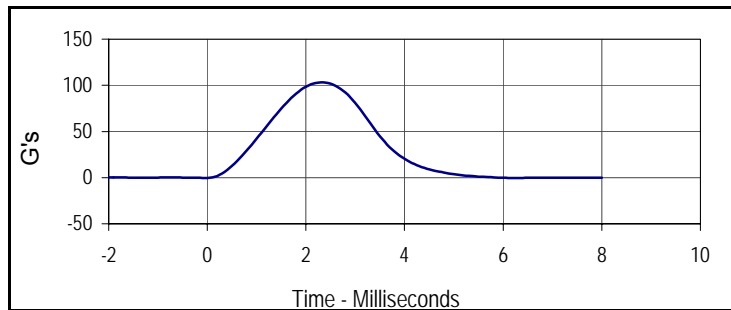
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	506	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.7	Pass
	Min		36.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.4	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5050	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

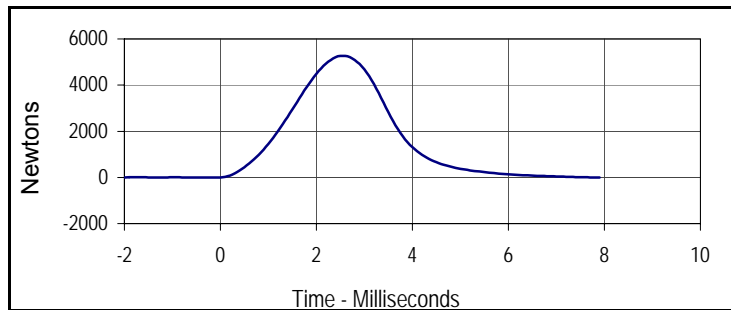
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5265	Pass
<b>Overall Test Results</b>				<b>Pass</b>



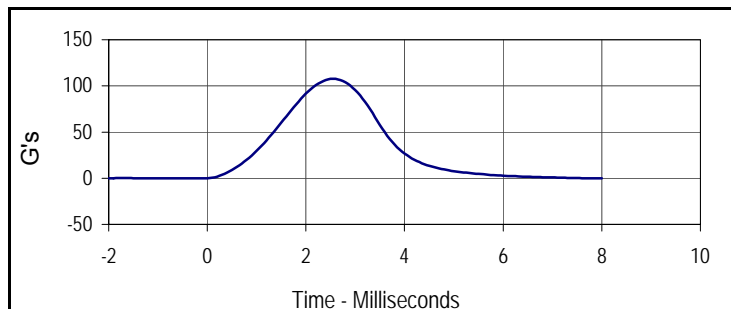
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5049.7	2.3	-21.2	6.2



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
103.2	2.3	-0.5	0.0



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5264.7	2.6	-9.8	-0.1



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
107.6	2.6	-0.4	0.0

Test Program: Hybrid III 50th Percentile Male Hip Joint-Femur Flexion Test

Test Date: 1/7/15



ATD Serial No.: 360

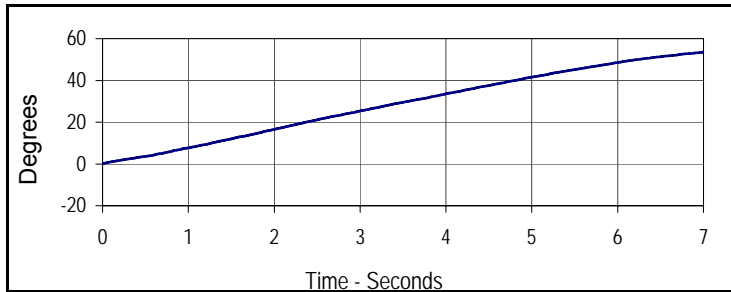
Test I.D.: M360LF006\_M360RF006

**Left Hip Joint-Femur Results**

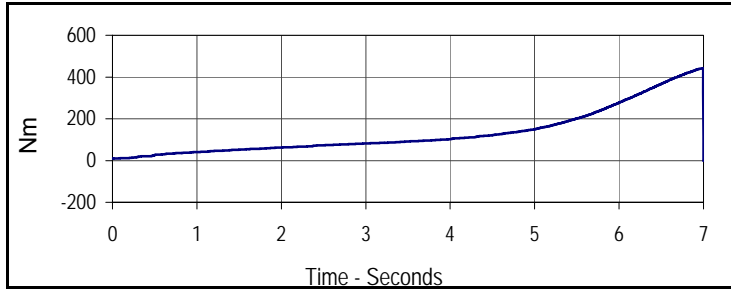
Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	581	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.7	Pass
	Min		36.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.4	Pass
Rotation Rate	deg/sec	5 to 10	7.6	Pass
Femur Torque at 30°	Nm	≤ 95	91.1	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	44.8	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Hip Joint-Femur Results**

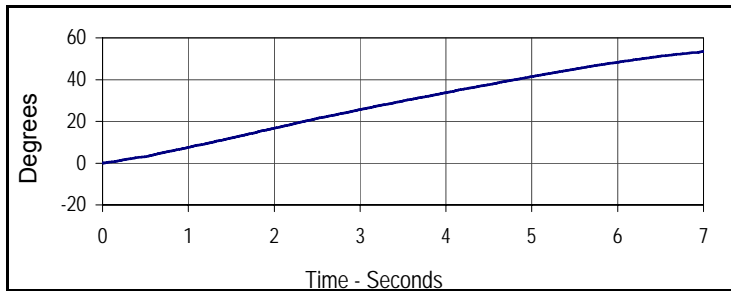
Rotation Rate	deg/sec	5 to 10	7.6	Pass
Femur Torque at 30°	Nm	≤ 95	85.8	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	43.3	Pass
<b>Overall Test Results</b>				<b>Pass</b>



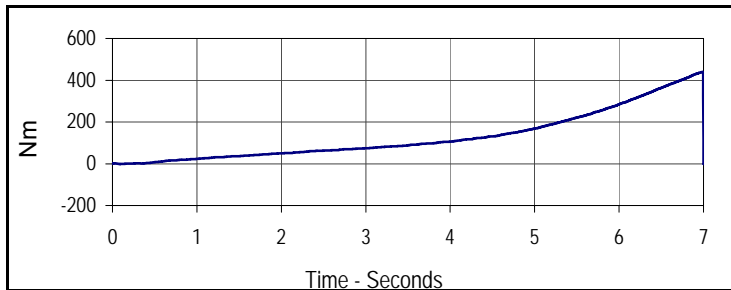
Curve Description			
Left Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
53.5	7.0	0.1	0.0



Curve Description			
Left Femur Torque			
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
442.0	7.0	0.1	0.0



Curve Description			
Right Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
53.4	7.0	0.1	0.0



Curve Description			
Right Femur Torque			
Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
439.7	7.0	0.1	0.0

Test Program: Hybrid III 5th Percentile Female Dummy Damage Checklist

Test Date: 1/8/15



ATD Serial No.: 141

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on or replacement of parts:

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Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 1/8/15



ATD Serial No.: 141

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.14	Pass
Laboratory Relative Humidity	%	10 to 70	35.3	Pass
A - Total sitting height	mm	774.7 to 800.1	786	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	450	Pass
C - H point height	mm	81.3 to 86.3	85	Pass
D - H point location from backline	mm	144.8 to 149.8	146	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	77	Pass
F - Thigh clearance	mm	119.4 to 134.6	126	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	250	Pass
H - Head back to backline	mm	40.7 to 45.7	44	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	285	Pass
J - Elbow rest height	mm	182.8 to 203.2	198	Pass
K - Buttock to knee length	mm	520.7 to 546.1	531	Pass
L - Popliteal length	mm	355.6 to 376.0	371	Pass
M - Knee pivot height	mm	393.7 to 419.1	402	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	186	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	473	Pass
S - Head Breadth	mm	137.1 to 147.3	144	Pass
T - Head Depth	mm	177.8 to 188.0	180	Pass
U - Hip Breadth	mm	299.7 to 314.9	302	Pass
V - Shoulder breadth	mm	350.5 to 365.7	359	Pass
W - Foot breadth	mm	78.8 to 94.0	90	Pass
X - Head circumference	mm	528.3 to 548.7	541	Pass
Y - Chest circumference (with chest jacket)	mm	850.8 to 881.3	864	Pass
Z - Waist circumference	mm	759.5 to 789.9	766	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	300	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	164	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop Test

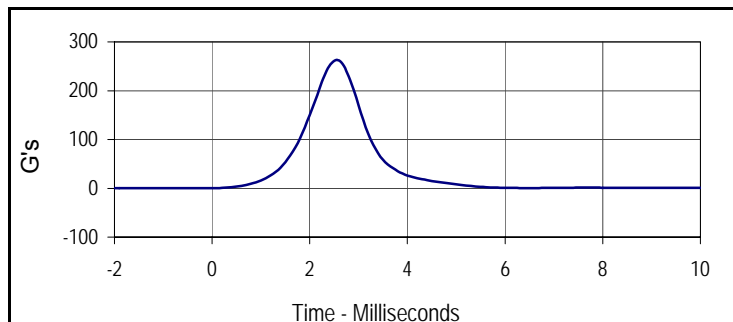
Test Date: 1/8/15



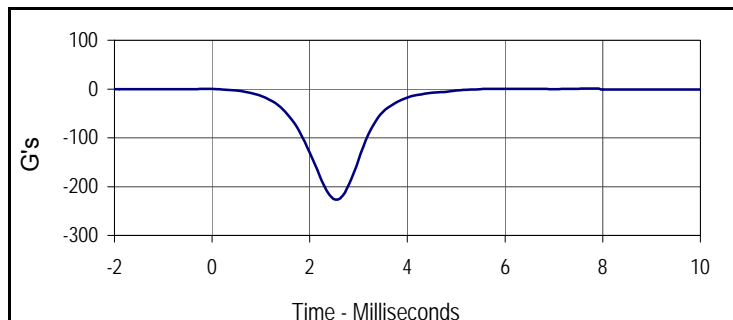
ATD Serial No.: 141

Test I.D.: F141HD065

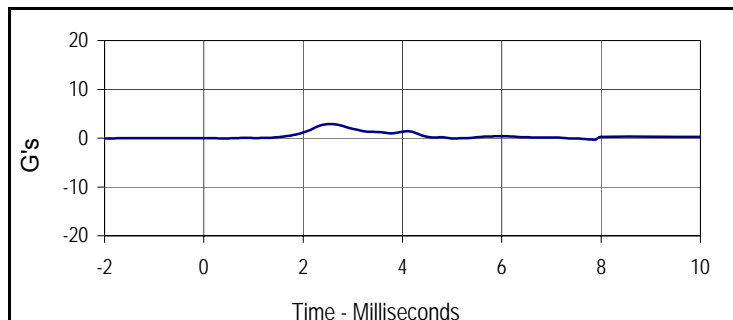
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	271	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	35.6	Pass
	Min		35.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	35.3	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	261.9	Pass
Peak Lateral Acceleration	G's	≤15.0	2.9	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	0.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



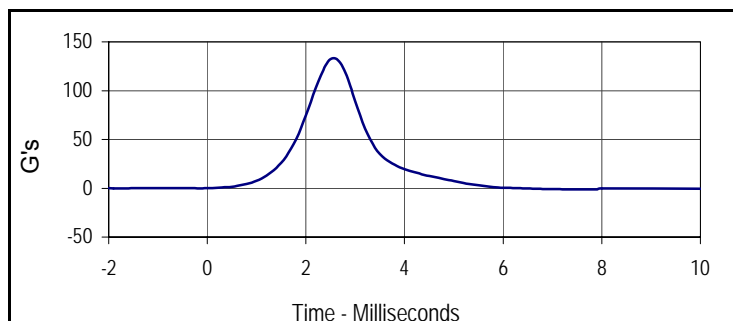
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
261.9	2.6	0.0	0.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.6	5.9	-225.7	2.5



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
2.9	2.6	-0.1	0.4



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
133.1	2.6	-0.1	-1.7

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

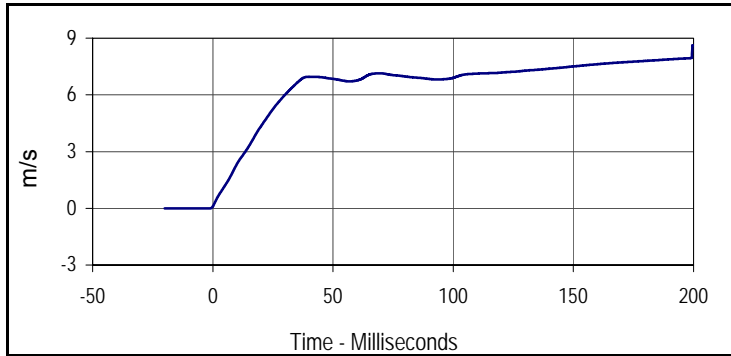
Test Date: 1/8/15



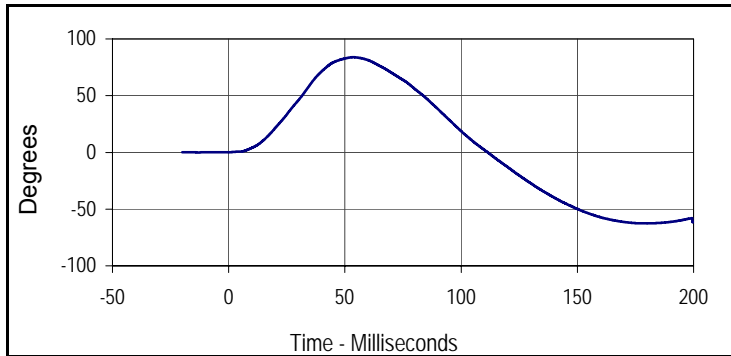
ATD Serial No.: 141

Test I.D.: F141NF065

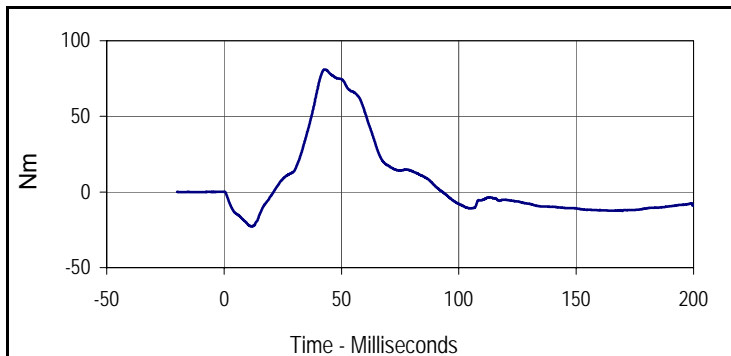
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	336	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	35.6	Pass	
	Min		35.1	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	35.1	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.98	Pass	
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.3	Pass
	20 Msec.	m/s	4.0 to 5.0	4.3	Pass
	30 Msec.	m/s	5.8 to 7.0	6.0	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	83.8	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	80.9	Pass
Positive Moment Decay, Time To 10 Nm	Msec.	80.0 to 100.0	83.9	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
8.6	199.5	0.0	-1.4



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
83.8	53.6	-62.6	178.6



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
81.0	43.0	-23.0	12.1

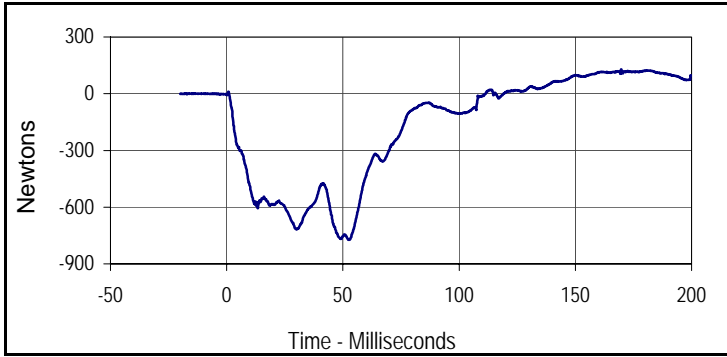
Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

Test Date: 1/8/15

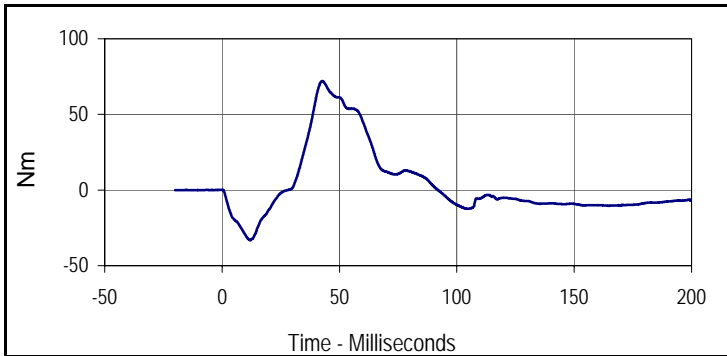


ATD Serial No.: 141

Test I.D.: F141NF065



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
129.0	169.7	-772.6	52.6



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
72.0	42.8	-33.3	12.0

Test Program: Hybrid III 5th Percentile Female Neck Extension Test

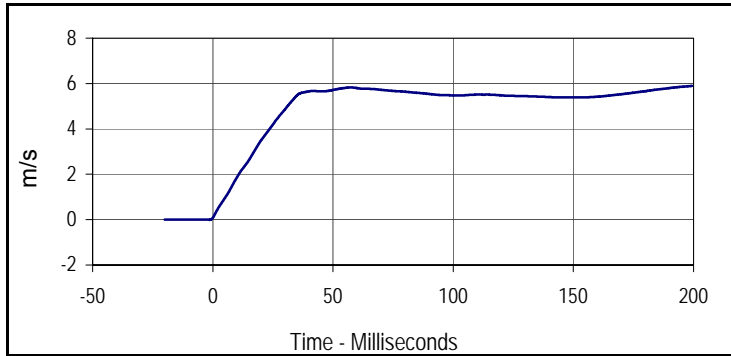
Test Date: 1/8/15



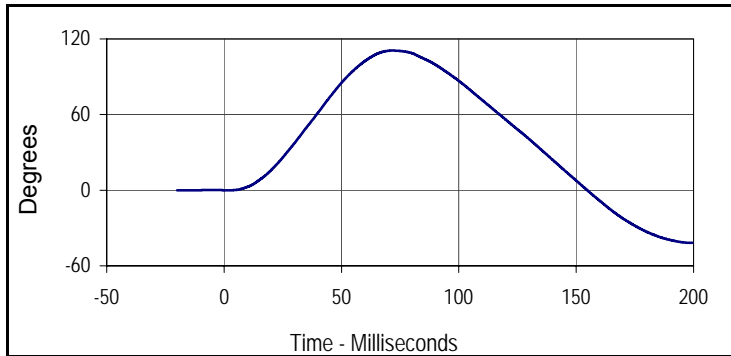
ATD Serial No.: 141

Test I.D.: F141NE065

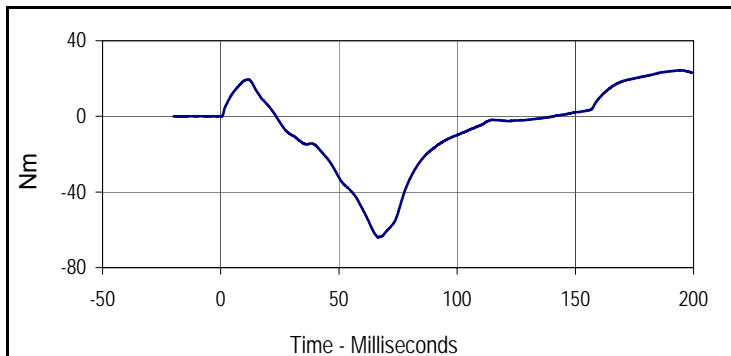
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	401	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	35.6	Pass	
	Min		35.1	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	35.2	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	6.06	Pass	
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.9	Pass
	20 Msec.	m/s	3.1 to 3.9	3.5	Pass
	30 Msec.	m/s	4.6 to 5.6	4.9	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	110.8	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-64.2	Pass
Positive Moment Decay, Time To -10 Nm	Msec.	94.0 to 114.0	99.8	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
6.2	0.0	0.0	-1.4



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
110.8	71.6	-41.8	199.4



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
24.4	194.7	-64.2	66.6

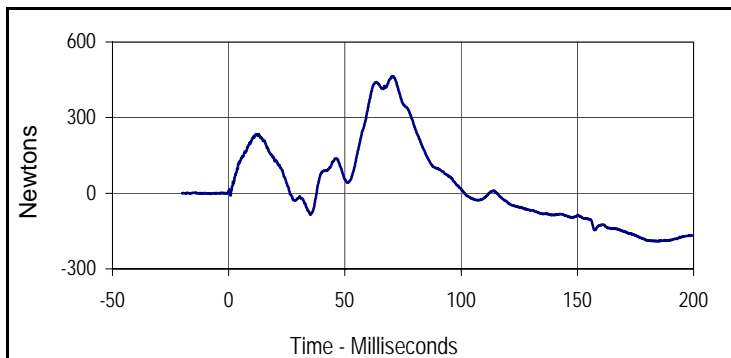
Test Program: Hybrid III 5th Percentile Female Neck Extension Test

Test Date: 1/8/15

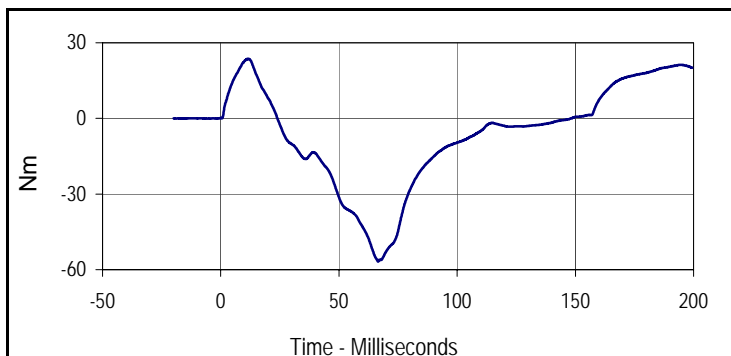


ATD Serial No.: 141

Test I.D.: F141NE065



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
463.7	70.3	-191.0	184.4



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
23.6	11.5	-56.9	66.6

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test

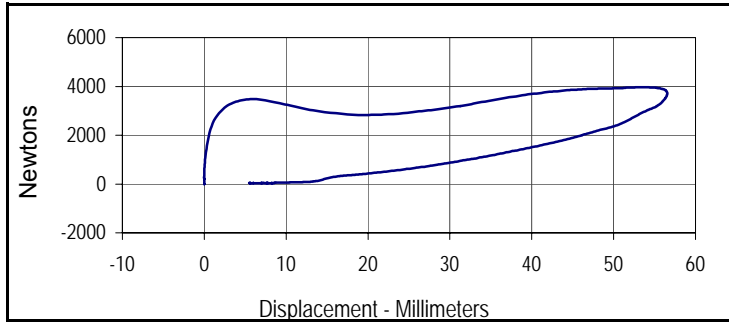
Test Date: 1/8/15



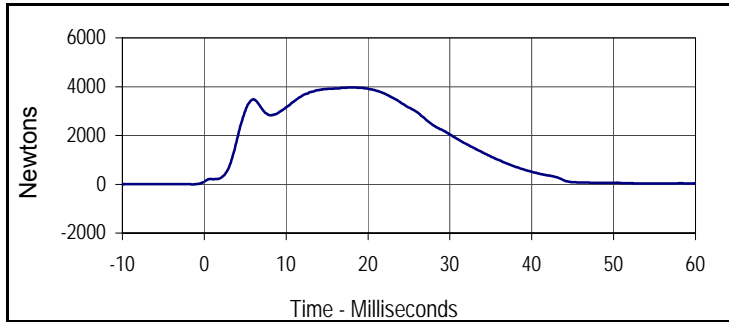
ATD Serial No.: 141

Test I.D.: F141CH065

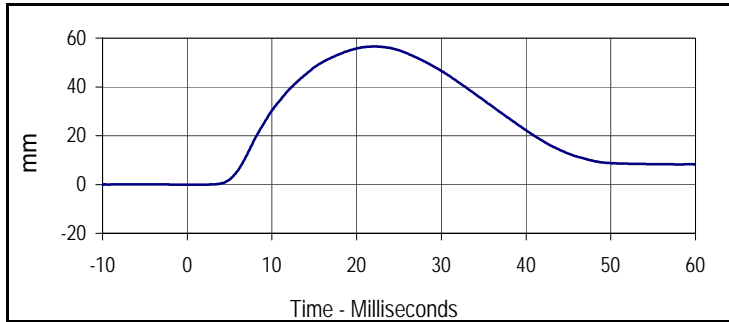
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	446	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	35.6	Pass
	Min		35.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	35.3	Pass
Probe Velocity	m/s	6.59 to 6.83	6.72	Pass
Peak Chest Deflection	mm	50.0 to 58.0	56.5	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	3924	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	3969	Pass
Internal Hysteresis	%	69 to 85	69.0	Pass
Overall Test Results				Pass



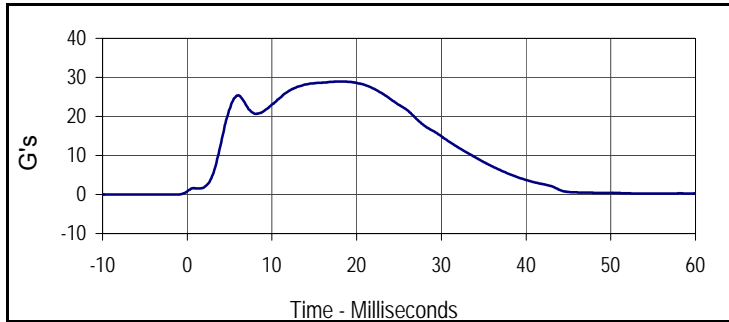
Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	69.0
Peak Probe Force		Peak Chest Deflection	
3969.2		56.5	



Curve Description			
Probe Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
3969.2	18.3	-1.1	-1.3



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
003	FIL	180	mm
Max	Time	Min	Time
56.5	22.1	0.0	2.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
29.0	18.3	0.0	-1.3

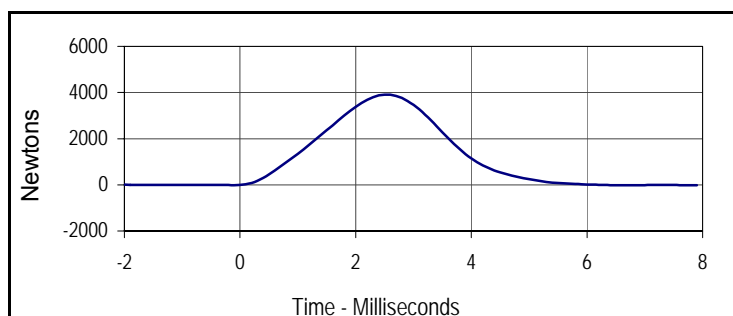


**Left Knee**

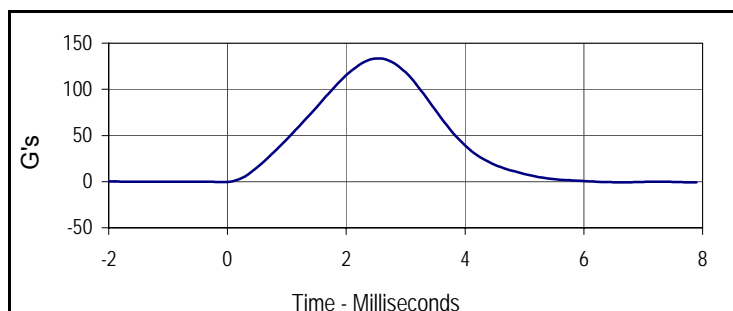
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	501	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	35.6	Pass
	Min		35.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	35.3	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	3450 to 4060	3910	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

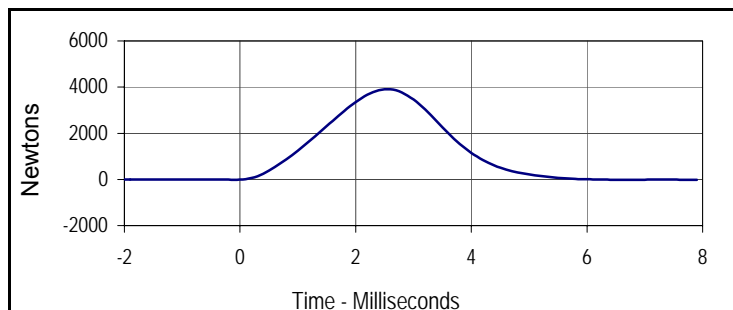
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	3450 to 4060	3907	Pass
<b>Overall Test Results</b>				<b>Pass</b>



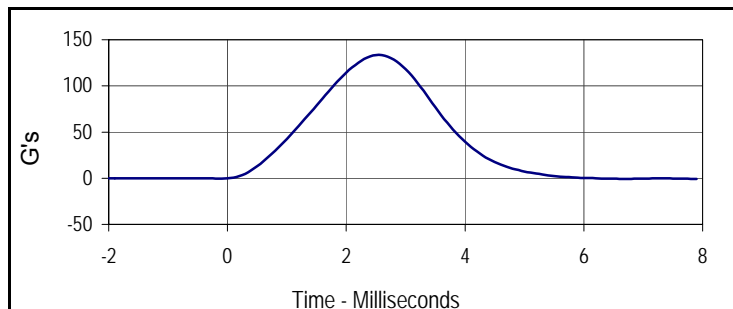
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3910.3	2.5	-22.2	6.7



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
133.4	2.5	-1.3	0.0



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3906.9	2.5	-21.2	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
133.3	2.5	-1.2	0.0

Test Program: Hybrid III 5th Percentile Female Torso Flexion Test

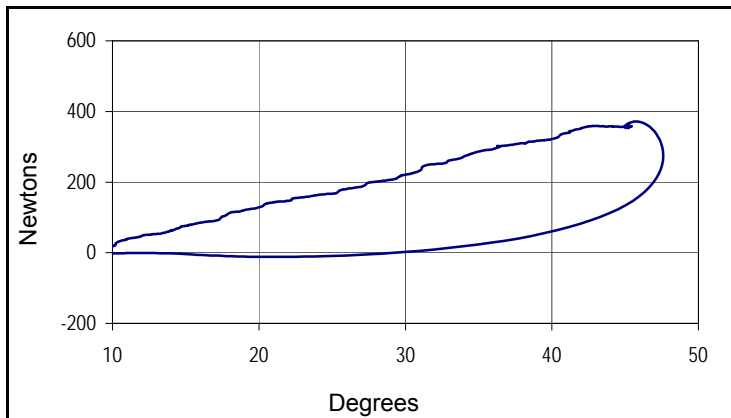
Test Date: 1/8/15



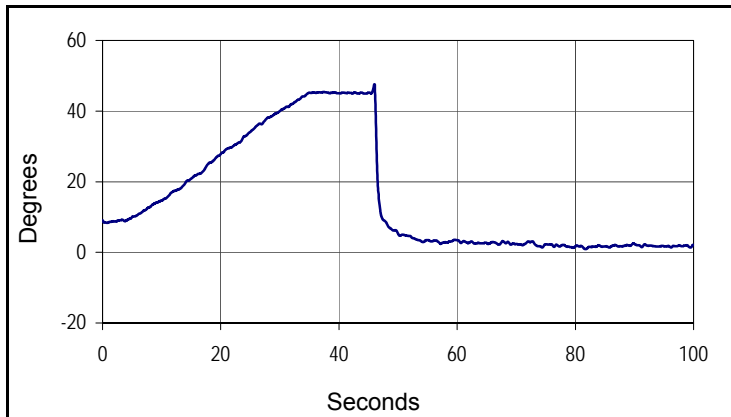
ATD Serial No.: 141

Test I.D.: TF065

Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	566	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	35.6	Pass
	Min		35.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	35.6	Pass
Initial Reference Plane Angle	Degrees	≤ 20	9.1	Pass
Peak Force at 45° +/-0.5°	Newtons	320.0 to 390.0	369.3	Pass
Torso Rotation Rate	deg/sec	0.5 to 1.5	1.0	Pass
Final Reference Plane Angle	Degrees	+/-8	2.1	Pass
Overall Test Results				Pass



Curve Description		
Force vs Torso Rotation		
Plot No.	Type	Filter Freq
001	FIL	1 Hz
Peak Force		Peak Rotation
371.3		47.6



Curve Description			
Torso Rotation			
Plot No.	Type	Filter Freq	Units
002	FIL	1 Hz	Degrees
Max	Time	Min	Time
47.6	46.0	0.9	81.7