

REPORT NUMBER: SINCAP-KAR-15-017

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

**CHRYSLER GROUP LLC
2015 DODGE CHALLENGER SXT 2-DOOR COUPE**

NHTSA No: M20150302

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



DECEMBER 2, 2014

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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9. Performing Organization Name and Address KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301		8. Performing Organization Report No. TR-P34003-09-NC
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		10. Work Unit No. 11. Contract or Grant No. DTNH22-09-D-00122
15. Supplementary Notes		13. Type of Report and Period Covered Final Test Report, Nov. 18 - Dec. 2, 2014
16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2015 Dodge Challenger SXT 2-door coupe in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on November 18, 2014. The impact velocity of the Moving Deformable Barrier was 61.95 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 22.2° C. The target vehicle's maximum post-test static crush was 172 mm located at level 3. The test vehicle's occupant performance data is as follows:		14. Sponsoring Agency Code NVS-111

Measurement Description	Driver ATD (ES-2re)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	111.6
Maximum Thoracic Rib Deflection	mm	44	21
Total Abdominal Force	N	2500	778
Pubic Symphysis Force	N	6000	1664

Measurement Description	Passenger ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	282.4
Resultant Lower Spine Acceleration	g	82	41
Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	1442
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdominal Rib Deflection	mm	45*	28

The door on the struck side of the vehicle did not separate from the body at the hinges or latch. The opposite side door did not open during the side impact event.

* Proposed IARV

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SECTION 1
TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY2015 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2015 Dodge Challenger SXT 2-door coupe. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated September 2013.

SECTION 2

SUMMARY OF TEST RESULTS

A 2015 Dodge Challenger SXT 2-door coupe was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.95 km/h (38.49 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by KARCO Engineering, LLC. in Adelanto, California, on November 18, 2014. Pre- and post-test photographs of the test vehicle, the MDB and the dummies (ES-2re and SID-IIs) are included in Appendix A of this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated September 2013. The side impact event was documented by 11 cameras. Camera locations are included in Data Sheet No. 5 of this report.

The dummy was instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen forward, middle, and rear y-axis load cells

Lower spine (12) tri-axial accelerometers

Pubic symphysis y-axis load cell

PASSENGER ATD (SID-IIs)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen upper rib and lower rib y-axis displacement potentiometers

Lower spine (12) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

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

Dummy injury readings were recorded as follows:

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	111.6
Maximum Thoracic Rib Deflection	mm	44	21
Combined Abdominal Force	N	2500	778
Pubic Symphysis Force	N	6000	1664

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	282.4
Lower Spine (T12) Resultant Acceleration	g	82	41
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1442
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdominal Rib Deflection	mm	45*	28

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other	No		No	

GENERAL COMMENTS

The door on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. The door on the non-struck side remained closed and latched. There was no ATD value that exceeded its limits.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

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 ²	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 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20150302
Model Year	2015
Make	Dodge
Model	Challenger SXT
Body Style	2-Door Coupe
VIN	2C3CDZAG6FH704472
Body Color	Billet Silver Metallic
Odometer Reading (km / mi)	129 / 80
Engine Displacement (L)	3.6
Type / No. of Cylinders	V6
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	8
Overdrive	Yes
Final Drive	Rear
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

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

Does Owner's Manual provide instructions to turn off automatic door locks? No

DATA FROM CERTIFICATION LABEL

Manufactured By	Chrysler Group LLC
Date of Manufacture	Aug-14
Vehicle Type	Passenger Car

GVWR (kg)	2246
GAWR Front (kg)	1275
GAWR Rear (kg)	1275

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				392.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				51.8

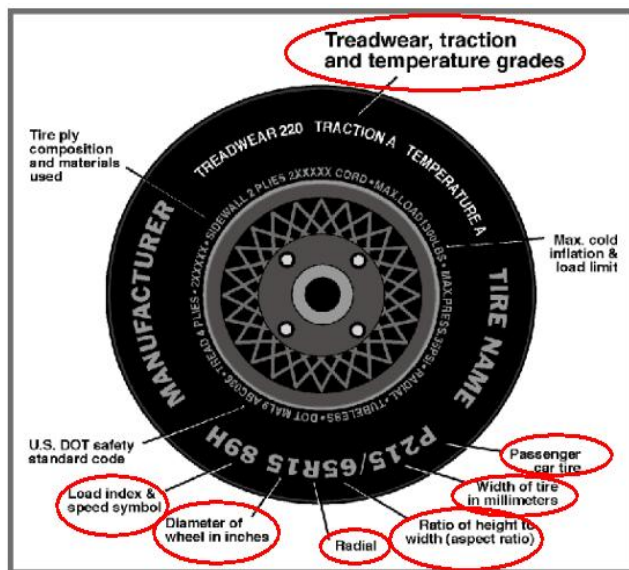
VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	350	350
Cold Pressure (kPa)	220	220
Recommended Tire Size	P235/55R18	P235/55R18
Tire Size on Vehicle	P235/55R18	P235/55R18
Tire Manufacturer	Michelin	Michelin
Tire Model	Primacy MXM4	Primacy MXM4
Treadware	500	500
Traction Grade	AA	AA
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 1 Polyamide, 2 Steel	2 Polyester, 1 Polyamide, 2 Steel
Load Index/Speed Symbol	100V	100V
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel
DOT Safety Code Left	B93J 0J4X 2914	B93J 0J4X 3014
DOT Safety Code Right	B93J 0J4X 3014	B93J 0J4X 3014

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

TIRE PRESSURES

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

MDB TIRE SPECIFICATIONS

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

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	454.0	404.5		511.5	492.0		494.5	482.0	
Right	kg	467.5	435.5		456.0	474.0		467.5	493.5	
Ratio	%	52.3%	47.7%	100.0%	50.0%	50.0%	100.0%	49.7%	50.3%	100.0%
Total	kg	921.5	840.0	1761.5	967.5	966.0	1933.5	962.0	975.5	1937.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1761.5	A
Actual Weight of 2 P572 ATDs Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	51.8	C
Calculated Vehicle Target Wt (TVTWT)	kg	1938.3	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight -4.5 kg to -9.0 kg)? Yes No

TEST VEHICLE ATTITUDE AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement***
LF	mm	780	778	Yes
RF	mm	785	780	Yes
LR	mm	774	772	Yes
RR	mm	784	777	Yes
Vehicle CG (Aft of Front Axle)	mm	1486	1475	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	7	31	

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Non Struck Side Door Panels	7.5
Spare Tire	14.5
Trunk Trim	10
Spare Tire Tools	2.5
Ballast / Equipment Added	85.5

Test Height Adjustable Setting (If Applicable)	
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DATA SHEET NO. 2

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

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	5.6	0.0	2.8
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle	As Tested SCRP Height	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	2.8	509	Max	560	569	578
			Mid	530	539	549
			Min	500	509	519
Front Passenger Seat	Fixed	Fixed	Max	547	551	559
			Mid	547	551	559
			Min	547	551	559
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

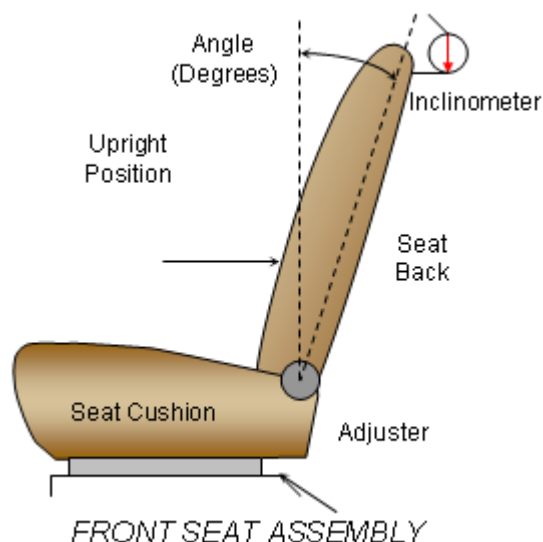
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	258		129	
Front Passenger Seat	210	22	110	11
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

*Detent zero (0) is the forward most detent

SEAT BACK ADJUSTMENT

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



SEAT BACK POSITION

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	52.8	26	15.8	7
Front Passenger Seat	51.5	26	15.0	7
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

*Detent zero (0) is the forward most detent

DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. The positions are marked H, M1,..., L from top to bottom.

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

HEAD RESTRAINT ADJUSTMENT

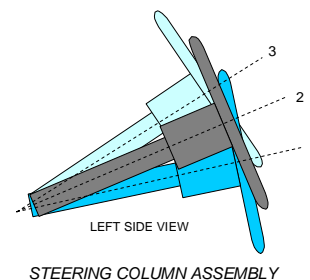
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	3	Full Up
Rear Seat	Fixed	Fixed

STEERING COLUMN ADJUSTMENT

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

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	19.1	135
Geometric Center - Position 2	21.3	163
Uppermost - Position 3	23.6	190
Telescoping Steering Wheel Travel		55
Test Position	21.3	163



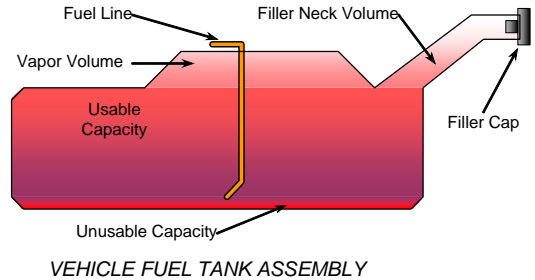
DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

FUEL PUMP

The vehicle is equipped with an electric fuel pump.
 The fuel pump starts pumping fuel when the ignition is in the "RUN" position.



FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	70.02
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	65.12
Actual amount of Solvent Used in Test	65.12
1/3 of Usable Capacity	23.34

Is the Actual Amount of Solvent Used in the test equal to 93% ± 1% of the Usable Capacity stated in the Form No. 1? **Yes** **No**

DATA SHEET NO. 3

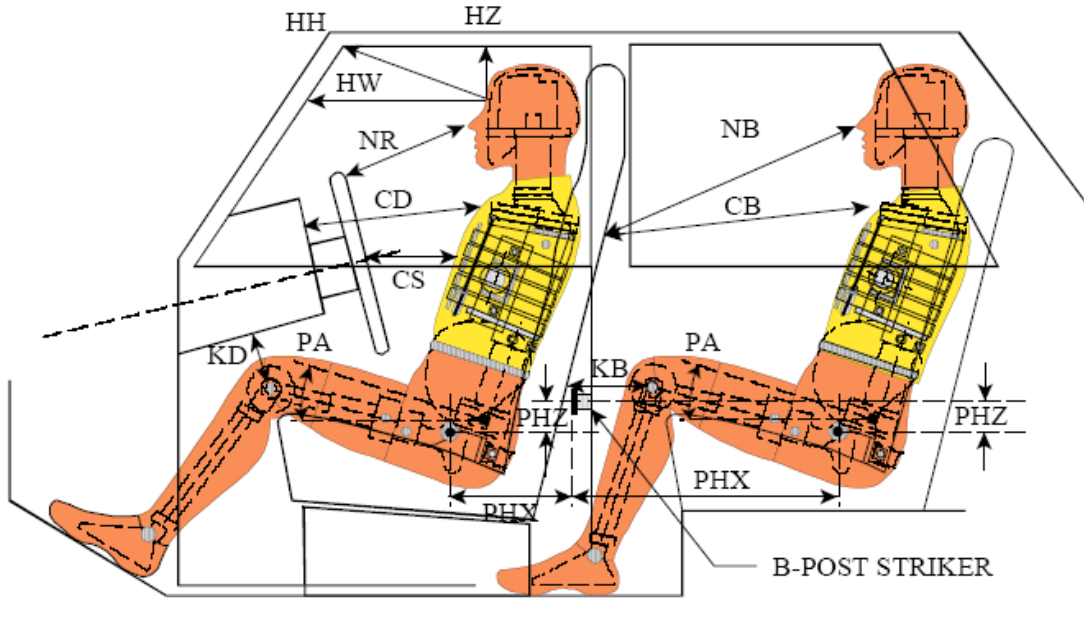
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe

NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test

Test Date: 11/18/14



LEFT SIDE VIEW

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

DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	486			
HW		Head to Windshield	760			
HZ	HZ	Head to Roof	209		243	
NR	NB	Nose to Rim/Seat Back	437		477	
CD	CB	Chest to Dash/Seat Back	636		441	
CS		Chest to Steering Wheel	335			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	214	35.7	172	21.5
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	185	43.7	162	17.0
PAX°	PAX°	Pelvic Tilt Angle X		16.4		22.4
	PAY°	Pelvic Tilt Angle Y		0.4		0.3
PHX	PHX	Hip Point to Striker (x-axis)	426		390	
PHZ	PHZ	Hip Point to Striker (z-axis)	162		123	

DATA SHEET NO. 4

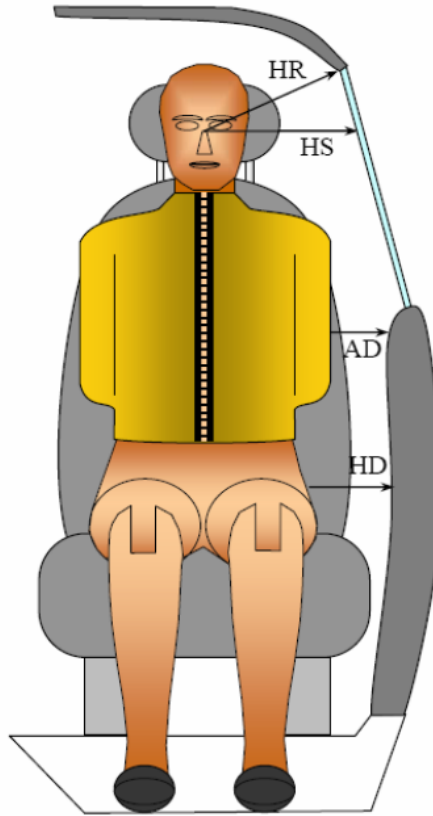
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe

NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test

Test Date: 11/18/14



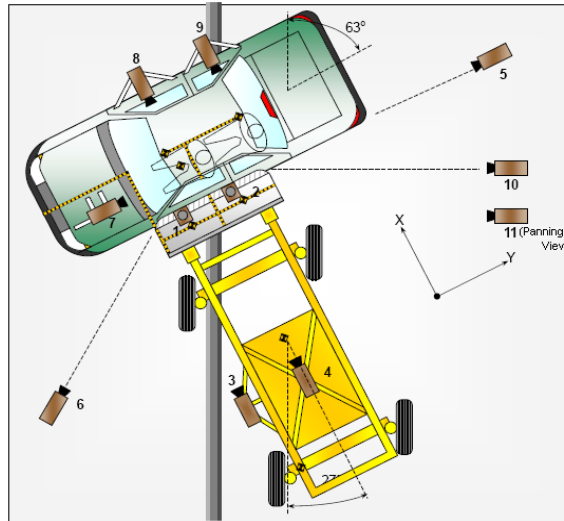
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	219	243
HS	Head to Side Window	mm	362	295
AD	Arm to Door	mm	141	126
HD	H-Point to Door	mm	151	145

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



CAMERA LOCATIONS AND DATA

No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	1220	2287	-5486	14	1000
2	Overhead Close-Up	609	2287	-5102	35	1000
3	Left Impact Point (MDB)	-2134	0	-1143	25	1000
4	Side Overall (MDB)	-3912	838	-1829	12.5	1000
5	Rear	-64	2485	-1348	85	1000
6	Left Front	-2266	-3564	-1475	24	1000
7	Driver Front (On-Board)	487	-990	-708	24	1000
8	Driver Side (On-Board)	1846	-1118	-516	12	1000
9	Passenger Side (On-Board)	1791	1684	-549	12	1000
10	Real Time Overall				Zoom	30
11	Real Time Inrun				Zoom	30

Reference: Impact Point Projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

*All measurements accurate to ±6 mm

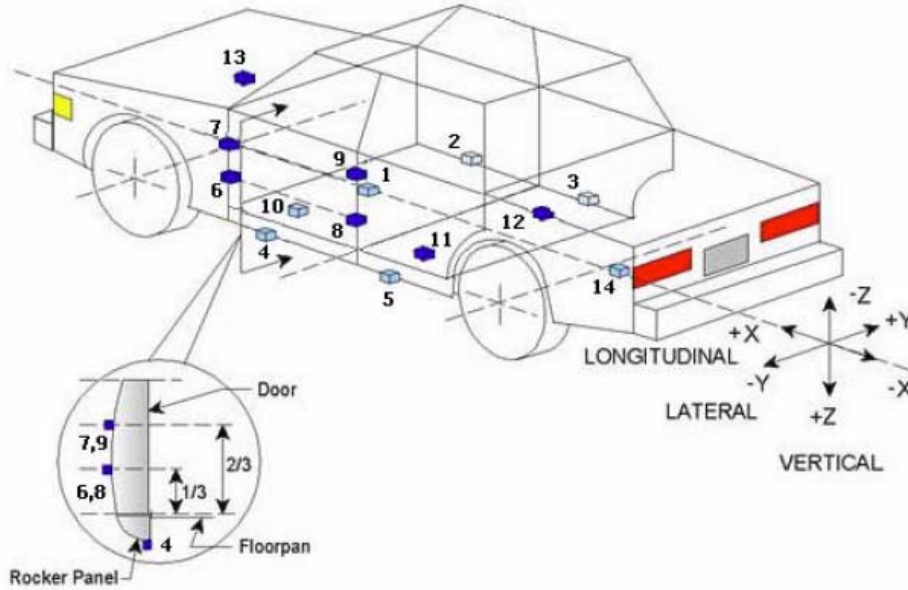
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	22
MDB Accelerometers	5
Total	59

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2093	0	-467
2	Right Sill at Front Seat	2664	720	-279
3	Right Sill at Rear Seat	1950	737	-547
4	Left Sill at Front Door	2392	-780	-176
5	Left Sill at Rear Door	1690	-780	-178
6	A-Pillar Lower	3272	-841	-543
7	A-Pillar Middle	3272	-841	-771
8	B-Pillar Lower			
9	B-Pillar Middle			
10	Front Seat Track	2411	-207	-256
11	Rear Seat Structure			
12	Right Rear Occupant Compartment	2113	368	-245
13	Engine Block	4031	65	-897
14	Rear Floorpan Above Axle	1074	0	-504

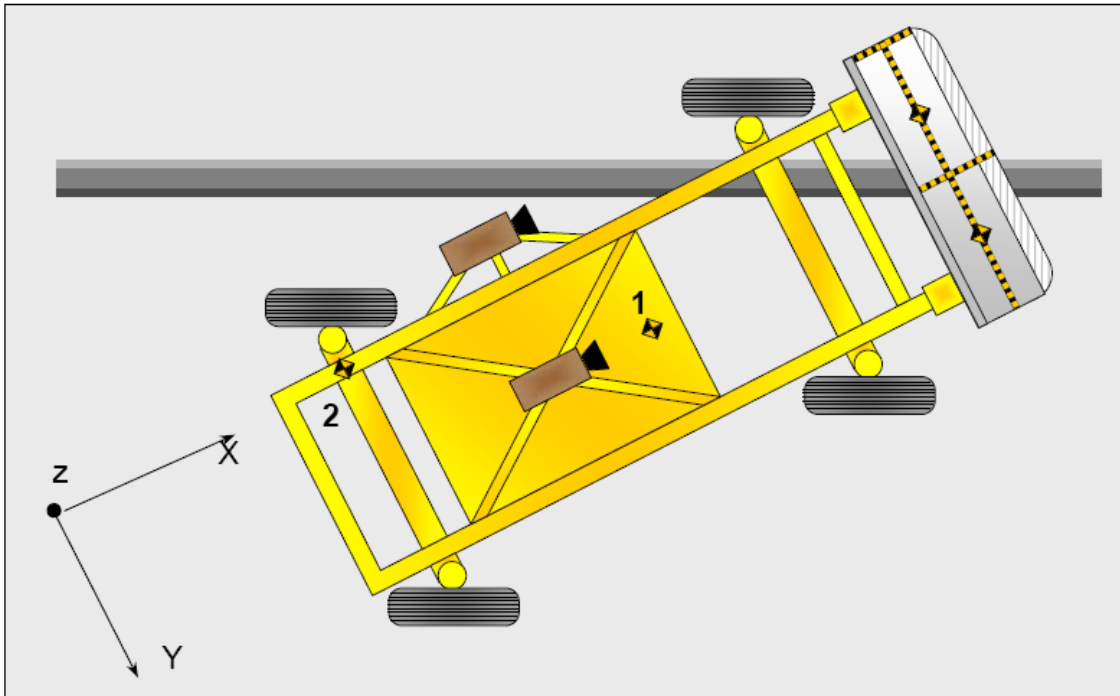
Reference: X – Rear surface of vehicle (+ forward)
 Y – Vehicle centerline (+ to right)
 Z – Ground plane (+ down)

DATA SHEET NO. 7

MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurement		
		X	Y	Z
1	MDB CG	-1195	0	-430
2	MDB Rear	-2642	-593	-608

Reference: X – Face of MDB (+ forward)
 Y – MDB centerline (+ to right)
 Z – Ground plane (+ down)

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	Curtain Airbag, Side Header
Top of Head	Curtain Airbag, Side Header	Side Header
Left Side of Head	Curtain Airbag, Side Header	Curtain Airbag, Side Header
Back of Head	Curtain Airbag, Side Header, Head Rest	Curtain Airbag, Side Header, Center Seat Back
Left Shoulder	Curtain Airbag, Door Panel	Curtain Airbag, Door Panel
Upper Torso	Seat, Torso/Pelvis Airbag	None
Lower Torso	Seat, Torso/Pelvis Airbag	Door Panel
Left Hip	Torso/Pelvis Airbag, Door Panel	Door Panel
Left Knee	Right Knee	Door Panel, Right Knee

POST-TEST DOOR PERFORMANCE

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

DATA SHEET NO. 8 ... (CONTINUED)

POST-TEST OBSERVATIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation
Sill Separation	No separation
Windshield Damage	None
Side Window Damage	Broken
Other Notable Effects	None

DATA SHEET NO. 8 ... (CONTINUED)

POST-TEST OBSERVATIONS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other	No		No	

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2952
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		508
Actual Impact Point (Aft of Front Axle)	mm		513
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	-5
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	14

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1251
Overall Length including Honeycomb Face	4023
Wheel Base of Framework Carriage	2595
CG location aft of Front Axle	1118

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	401.8	298.0	699.8
Right	kg	376.9	291.6	668.5
Ratio	%	56.9%	43.1%	100.0%
Totals	kg	778.7	589.6	1368.3

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.95
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.91
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.1
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.7
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.3

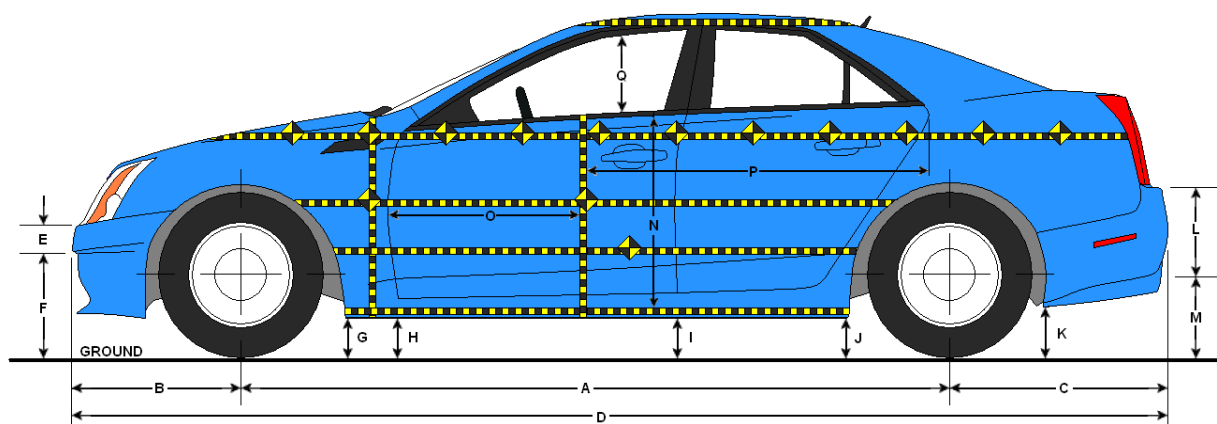
MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	700	Right	326
B	Top of Bumper	533	700	Right	297
C	Mid Level	686	700	Right	222
D	Top of Stack	813	700	Left	238

DATA SHEET NO. 10

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

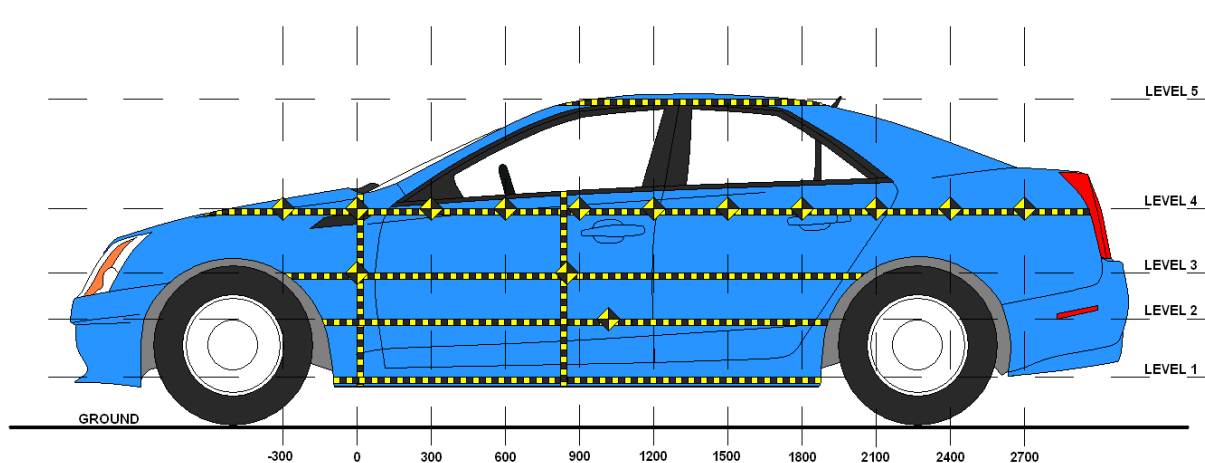
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2952	2945	-7
B	Front Axle to FSOV	967	962	-5
C	Rear Axle to RSOV	1109	1119	10
D	Total Length at Centerline	5028	5026	-2
E	Front Bumper Thickness	163	163	0
F	Front Bumper Bottom to Ground	432	442	10
G	Sill Height at Front Wheel Well	288	281	-7
H	Sill Height at Front Door Leading Edge	275	268	-7
I	Sill Height at B-Pillar	296	279	-17
J1	Sill Height at Rear Wheel Well	305	292	-13
J2	Pinch Weld Height at Rear Wheel Well	203	186	-17
K	Sill Height Aft of Rear Wheel Well	367	351	-16
L	Rear Bumper Thickness	144	143	-1
M	Rear Bumper Bottom to Ground	654	633	-21
N	Sill Height to Bottom of Front Window Sill	708	715	7
O	Front Door Leading Edge to Impact CL	653	642	-11
P	Rear Door Trailing Edge to Impact CL	1804	1669	-135
Q	Front Window Opening	339	340	1
R	Right Side Length	3715	3718	3
S	Left Side Length	3713	3698	-15
T	Vehicle Width at B-Pillar	1918	1882	-36

All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 11

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	290	61	1200
2	Occupant H-Point	532	146	1350
3	Mid-Door	648	172	1200
4	Window Sill	973	47	1650
5	Window Top	1394	14	1650

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				676					688					12	
-150			552	653				585	662				33	9	
0	623	562	550	639		650	614	610	650		27	52	60	11	
150	618	561	549	634		670	651	633	645		52	90	84	11	
300	616	561	548	628		669	665	638	649		53	104	90	21	
450	615	559	547	624		667	682	673	641		52	123	126	17	
600	613	559	547	567		669	676	692	588		56	117	145	21	
750	613	559	546	618		670	671	704	633		57	112	158	15	
900	613	559	546	614	849	670	668	711	636	860	57	109	165	22	11
1050	612	559	546	614	841	673	677	711	641	852	61	118	165	27	11
1200	613	559	546	612	839	674	683	718	650	851	61	124	172	38	12
1350	613	559	546	613	838	673	705	699	648	850	60	146	153	35	12
1500	615	560	547	613	839	662	646	644	641	850	47	86	97	28	11
1650	618	563	551	607	841	657	612	634	654	855	39	49	83	47	14
1800	619	565	553	589	846	645	634	640	629	859	26	69	87	40	13
1950	622	567	554	576	865	635	604	602	610	874	13	37	48	34	9
2100				570	905				594	911				24	6
2250				572					589					17	
2400				575					587					12	
2550				583					592					9	
2700				589					597					8	
2850				602					607					5	

DATA SHEET NO. 11 ... (CONTINUED)

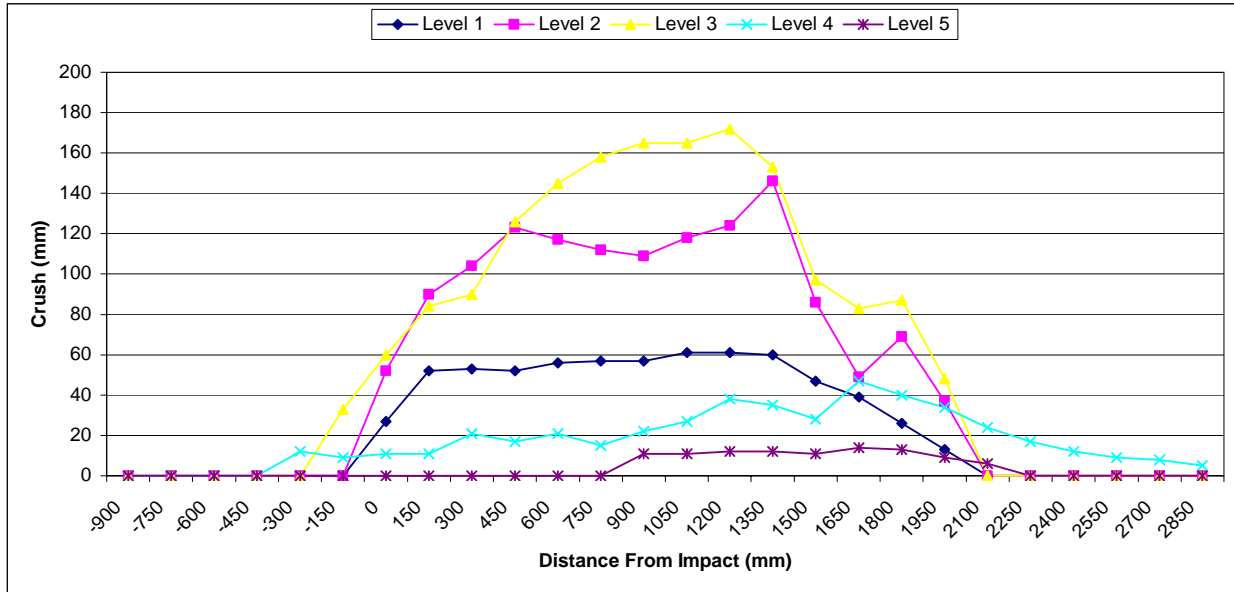
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe

NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test

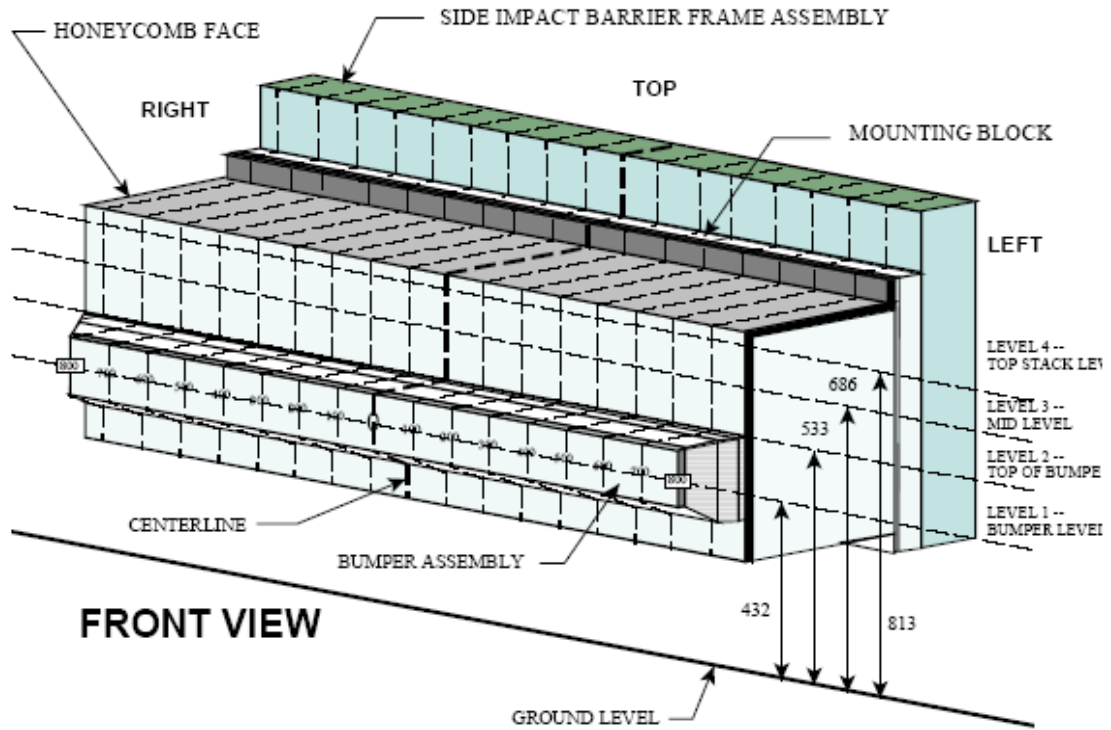
Test Date: 11/18/14



DATA SHEET NO. 12

MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

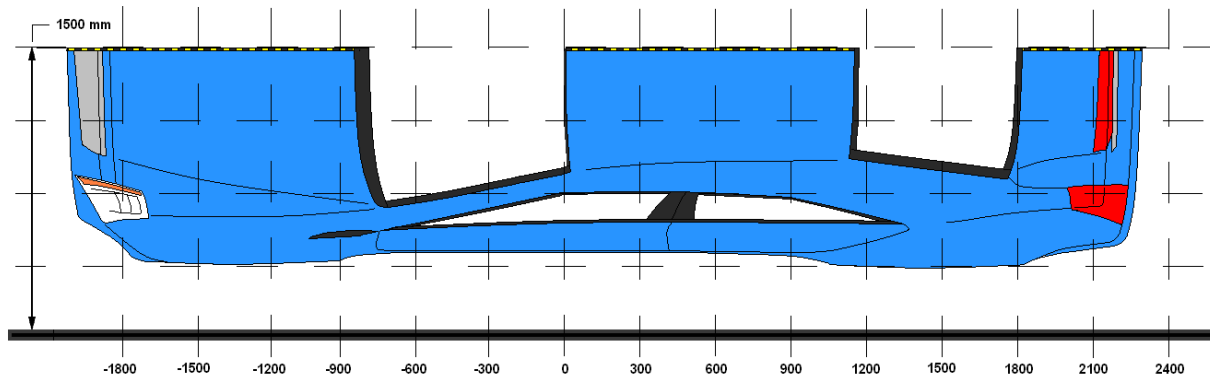
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	324	326	307	264	244	234	225	219	217	215	211	209	207	217	231	244	234
2	290	297	229	199	207	187	175	175	175	172	167	157	152	161	173	182	197
3	216	222	212	154	115	94	85	80	76	77	87	92	105	127	162	202	185
4	225	222	199	144	97	70	63	58	68	77	87	112	132	157	197	238	234

All dimensions in millimeters.

DATA SHEET NO. 13

VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2850	4	602	607	5
2	2250	4	572	589	17
3	1650	3	551	634	83
4	900	3	546	711	165
5	300	2	561	665	104
6	-300	4	676	688	12

MDB DAMAGE PROFILE DISTANCES

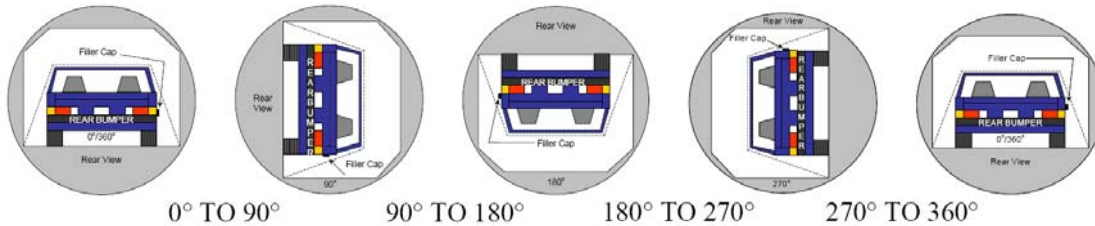
DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	234
2	500	Left	1	217
3	200	Left	1	211
4	200	Right	1	225
5	500	Right	1	264
6	800	Right	1	324

DATA SHEET NO. 14

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302
 Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14
 Temperature at Time of Impact: 22.2° C Test Time: 12:38 PM

- 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 Details: There was no Stoddard solvent spillage.



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	82	300	382
90° To 180°	78	300	378
180° To 270°	79	300	379
270° To 360°	81	300	381

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

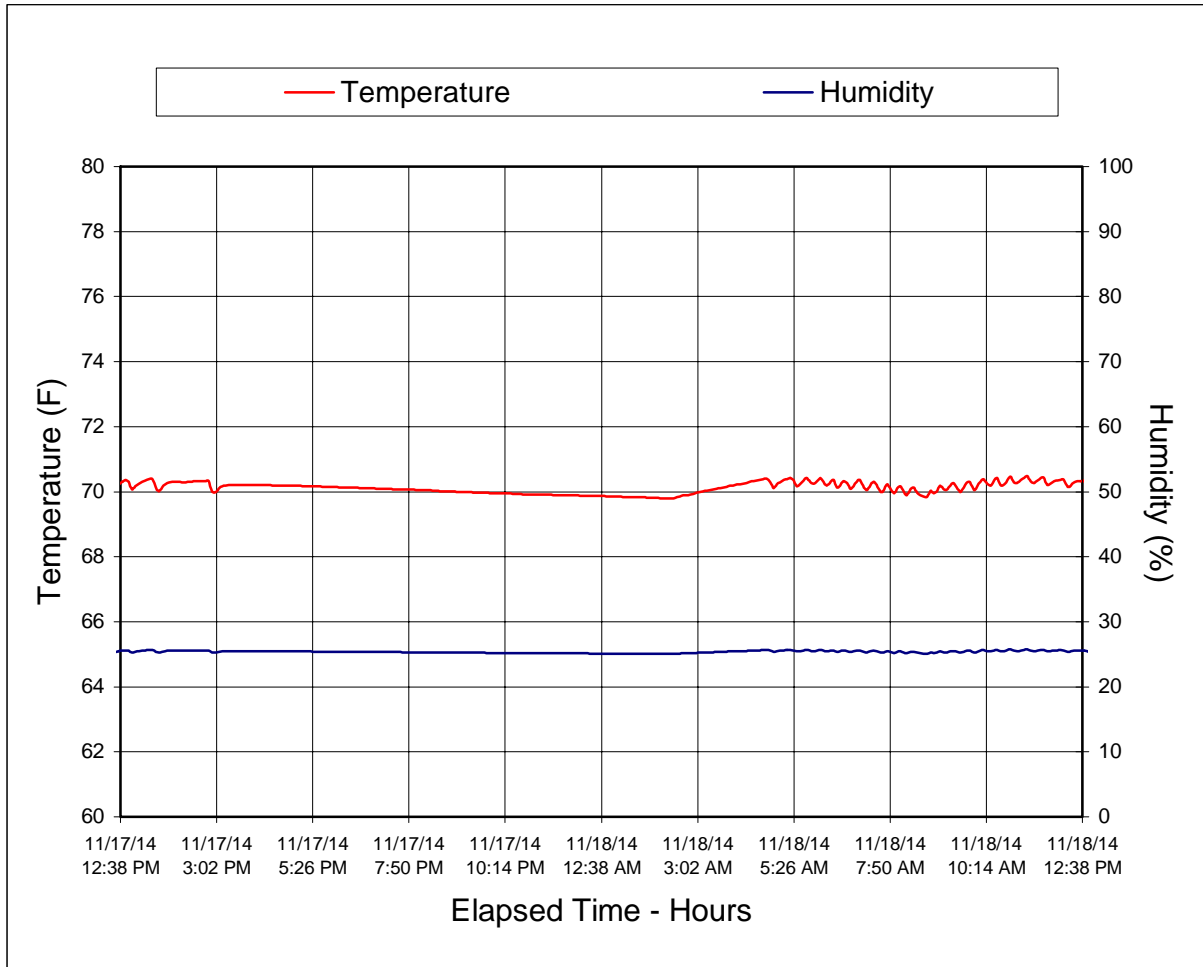
Test Phase	Spillage Location
0° To 90°	N/A
90° To 180°	N/A
180° To 270°	N/A
270° To 360°	N/A

DATA SHEET NO. 15

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe NHTSA No. M20150302

Test Program: NCAP MDB Side Impact Test Test Date: 11/18/14



**APPENDIX A
PHOTOGRAPHS**

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FIGURE 1. As-Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 2. As-Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle

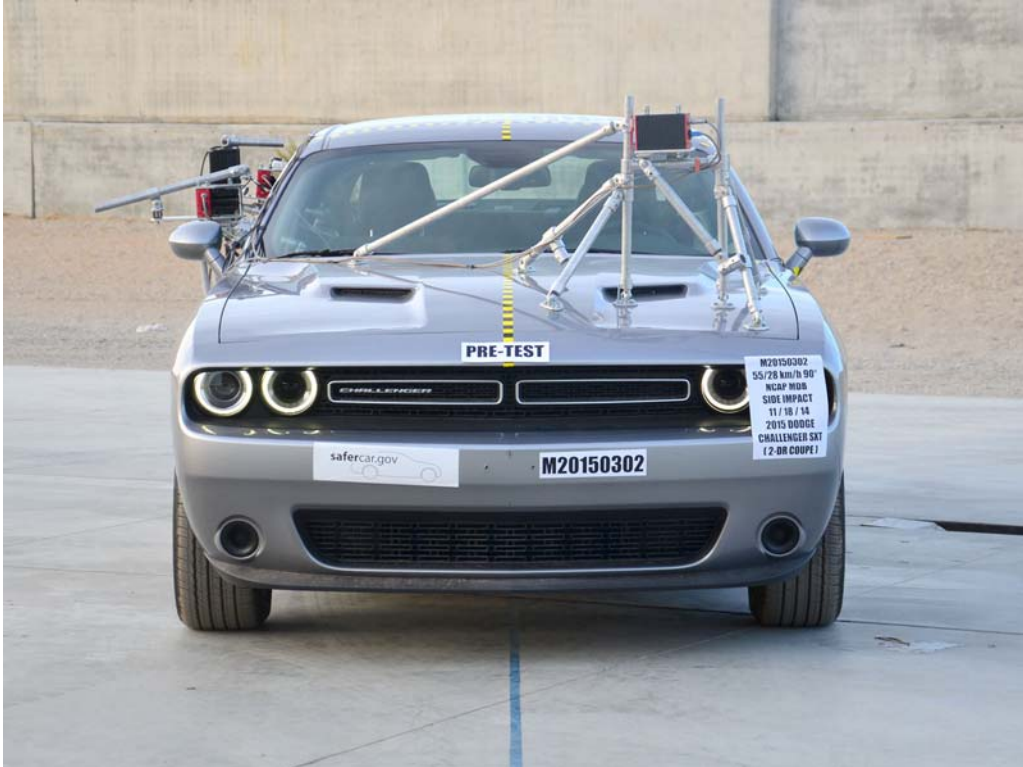


FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 6. Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 7. Pre-Test Left Side View of Test Vehicle



FIGURE 8. Post-Test Left Side View of Test Vehicle



FIGURE 9. Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



FIGURE 10. Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



FIGURE 13. Pre-Test Right Side View of Test Vehicle



FIGURE 14. Post-Test Right Side View of Test Vehicle



FIGURE 15. Pre-Test Overhead View of Test Area



FIGURE 16. Post-Test Overhead View of Test Area



FIGURE 17. Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



FIGURE 18. Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle



FIGURE 19. Pre-Test Close-Up View of Impact Point Target



FIGURE 20. Post-Test Close-Up View of Impact Point Target



FIGURE 21. Pre-Test Left Front Door Latch Close-Up



FIGURE 22. Post-Test Left Front Door Latch Close-Up

Photograph Not Applicable

Vehicle Not Equipped with
Rear Doors

FIGURE 23. Pre-Test Left Rear Door Latch Close-Up

Photograph Not Applicable

Vehicle Not Equipped with
Rear Doors

FIGURE 24. Post-Test Left Rear Door Latch Close-Up



FIGURE 25. Pre-Test Front Close-Up View of Driver Dummy



FIGURE 26. Post-Test Front Close-Up View of Driver Dummy



FIGURE 27. Pre-Test Left Side View of Driver Dummy
Showing Belt and Chalking



FIGURE 28. Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 29. Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 30. Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



FIGURE 31. Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 32. Pre-Test Overhead View of Driver Seat Pan Prior to Dummy Positioning



FIGURE 33. Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



FIGURE 34. Pre-Test Placement of Driver Dummy's Feet



FIGURE 35. Pre-Test View of Belt Anchorage for Driver Dummy



FIGURE 36. Pre-Test Left Side View of Steering Wheel



FIGURE 37. View of Disengaged Parking Brake

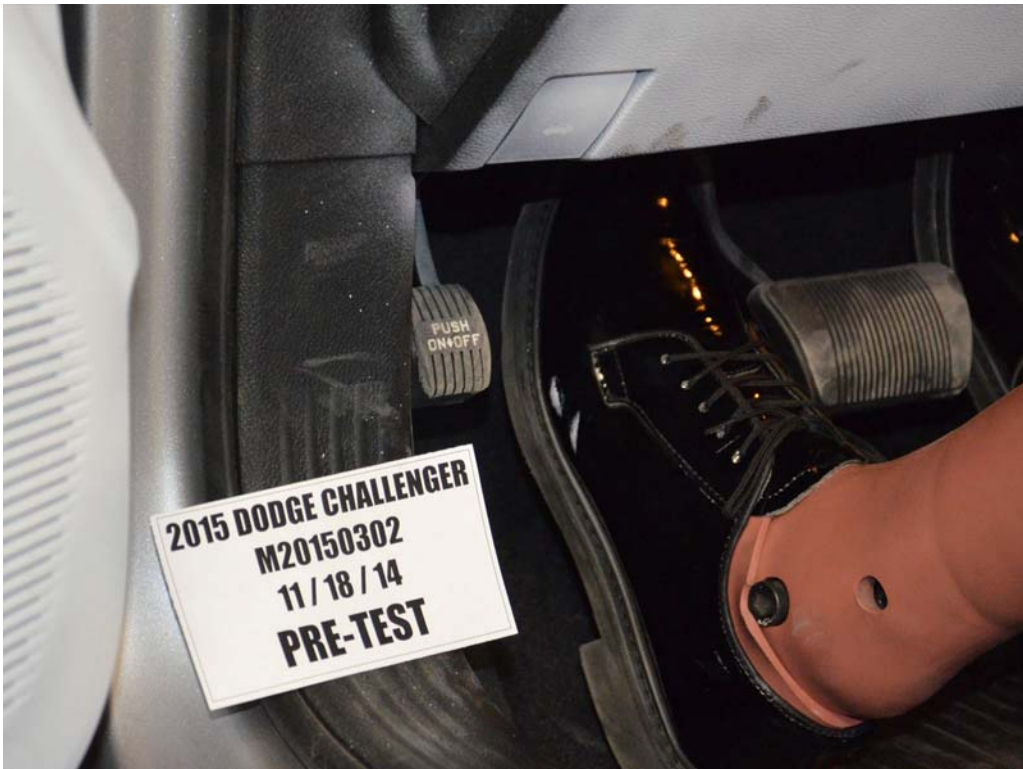


FIGURE 38. Pre-Test View of Parking Brake



FIGURE 39. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 40. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 41. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 42. Pre-Test Driver Dummy and Door Clearance View



FIGURE 43. Post-Test Driver Dummy and Door Clearance View



FIGURE 44. Pre-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment



FIGURE 45. Post-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment



FIGURE 46. Pre-Test Driver Inner Door Panel View



FIGURE 47. Post-Test Driver Inner Door Panel View
Showing Driver Dummy Contact Locations



FIGURE 48. Post-Test Driver Dummy Close-Up Head Contact
with Vehicle Interior View

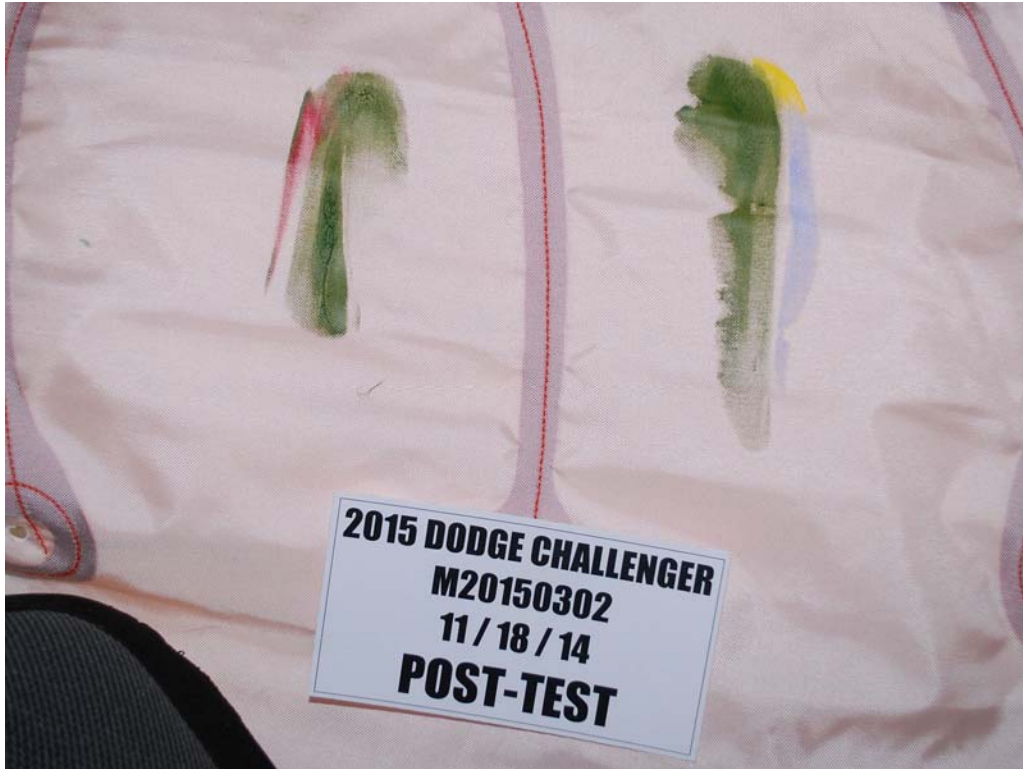


FIGURE 49. Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View



FIGURE 50. Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 51. Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View



FIGURE 52. Post-Test Driver Dummy Close-Up Pelvis Contact with Vehicle Interior View



FIGURE 53. Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View

Photograph Not Applicable

No Driver Dummy Knee
Contact with Vehicle Interior

FIGURE 54. Post-Test Driver Dummy Close-Up Knee Contact View



FIGURE 55. Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



FIGURE 56. Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



FIGURE 57. Post-Test Left Side View of Rear Passenger Dummy
Shoulder and Door Top View



FIGURE 58. Pre-Test Frontal View of Rear Passenger Seat Back
Prior to Dummy Positioning



FIGURE 59. Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 60. Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



FIGURE 61. Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



FIGURE 62. Pre-Test View of Rear Passenger Dummy's Neck
Showing Position of Adjustable Neck Bracket



FIGURE 63. Pre-Test View of Rear Passenger Dummy's Head
Showing Dummy's Head is Level



FIGURE 64. Pre-Test Placement of Rear Passenger Dummy's Feet



FIGURE 65. Pre-Test View of Belt Anchorage for Rear Passenger Dummy



FIGURE 66. Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



FIGURE 67. Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



FIGURE 68. Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



FIGURE 69. Pre-Test Rear Passenger Dummy and Door Clearance View



FIGURE 70. Post-Test Rear Passenger Dummy and Door Clearance View



FIGURE 71. Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 72. Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 73. Pre-Test Rear Passenger Inner Door Panel View



FIGURE 74. Post-Test Rear Passenger Inner Door Panel View
Showing Rear Passenger Dummy Contact Locations



FIGURE 75. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Vehicle Interior View



FIGURE 76. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Side Airbag View



FIGURE 77. Post-Test Rear Passenger Dummy Close-Up
Torso Contact with Vehicle Interior View



FIGURE 78. Post-Test Rear Passenger Dummy Close-Up
Torso Contact with Side Airbag View



FIGURE 79. Post-Test Rear Passenger Dummy Close-Up
Pelvis Contact with Vehicle Interior View

Photograph Not Applicable

**Vehicle Not Equipped with
Rear Passenger Side Airbag**

FIGURE 80. Post-Test Rear Passenger Dummy Close-Up
Pelvis Contact with Side Airbag View

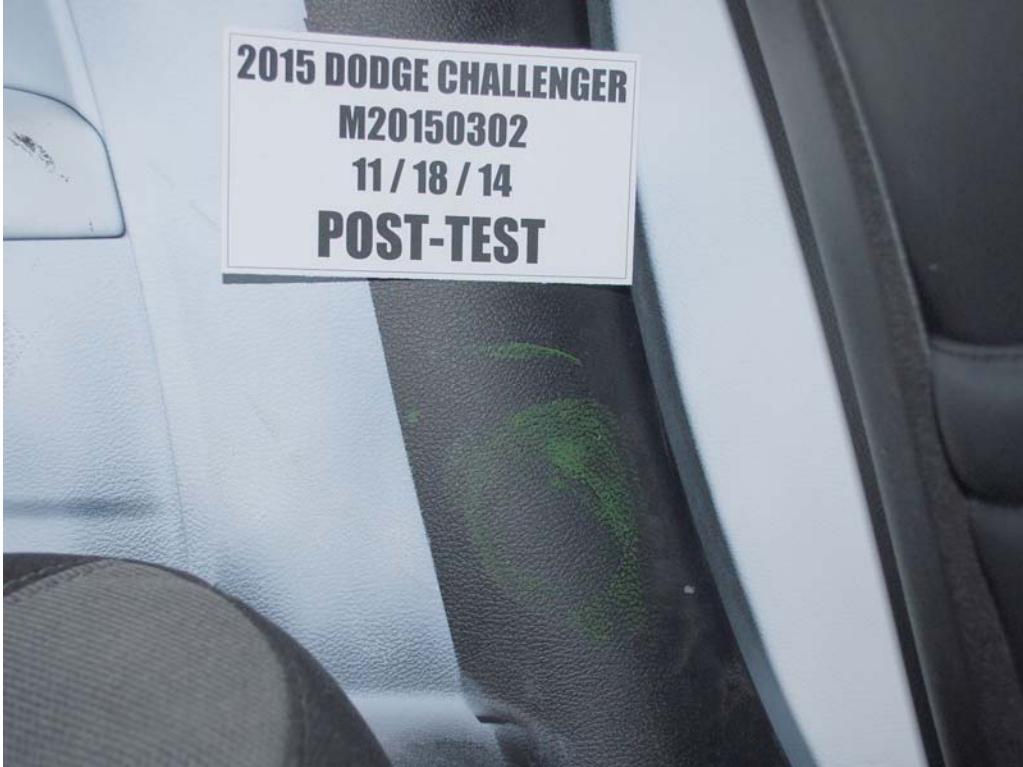


FIGURE 81. Post-Test Rear Passenger Dummy Close-Up Knee Contact View



FIGURE 82. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 83. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 84. Pre-Test Front View of MDB Impactor Face



FIGURE 85. Post-Test Front View of MDB Impactor Face

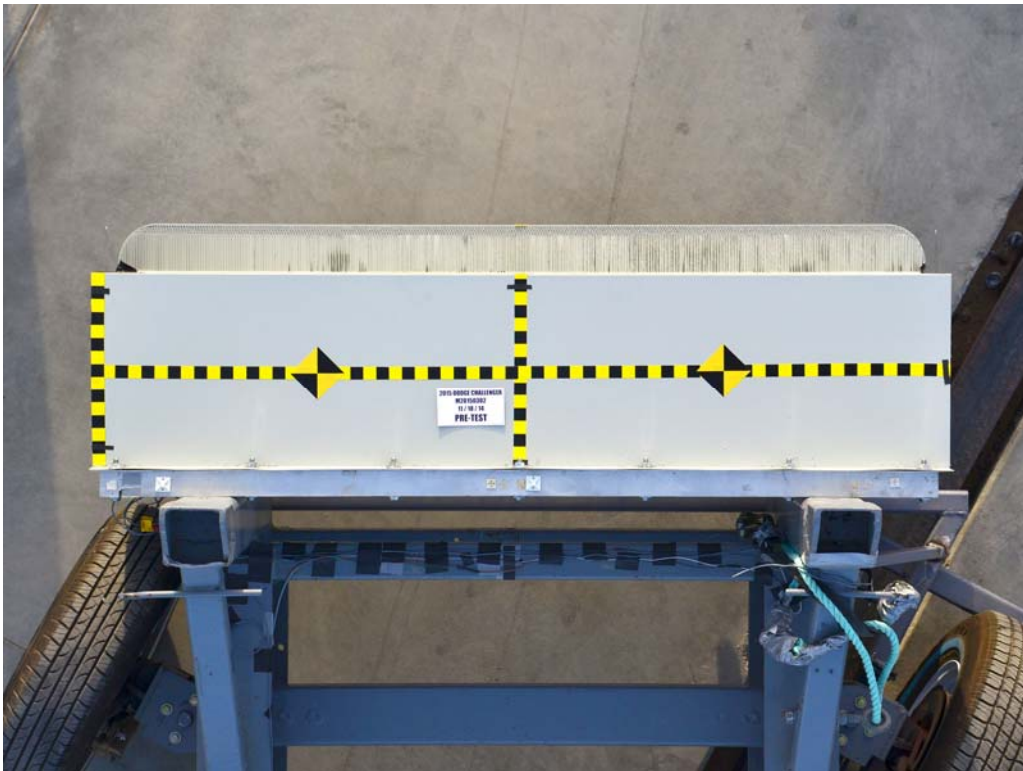


FIGURE 86. Pre-Test Top View of MDB Impactor Face



FIGURE 87. Post-Test Top View of MDB Impactor Face



FIGURE 88. Pre-Test Left Side View of MDB Impactor Face



FIGURE 89. Post-Test Left Side View of MDB Impactor Face



FIGURE 90. Pre-Test Right Side View of MDB Impactor Face



FIGURE 91. Post-Test Right Side View of MDB Impactor Face



FIGURE 92. Close-Up View of Vehicle's Certification Label



FIGURE 93. Close-Up View of Vehicle's Tire Information Placard or Label



FIGURE 94. Pre-Test Ballast View



FIGURE 95. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees

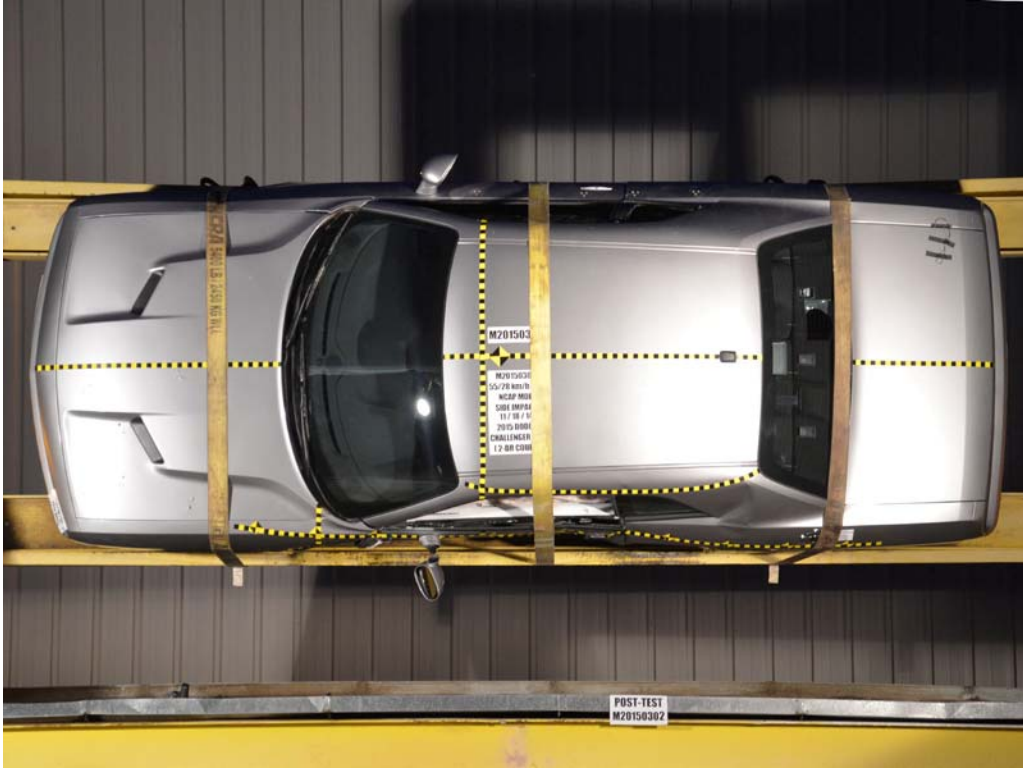


FIGURE 97. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 98. FMVSS No. 301 Static Rollover 180 Degrees

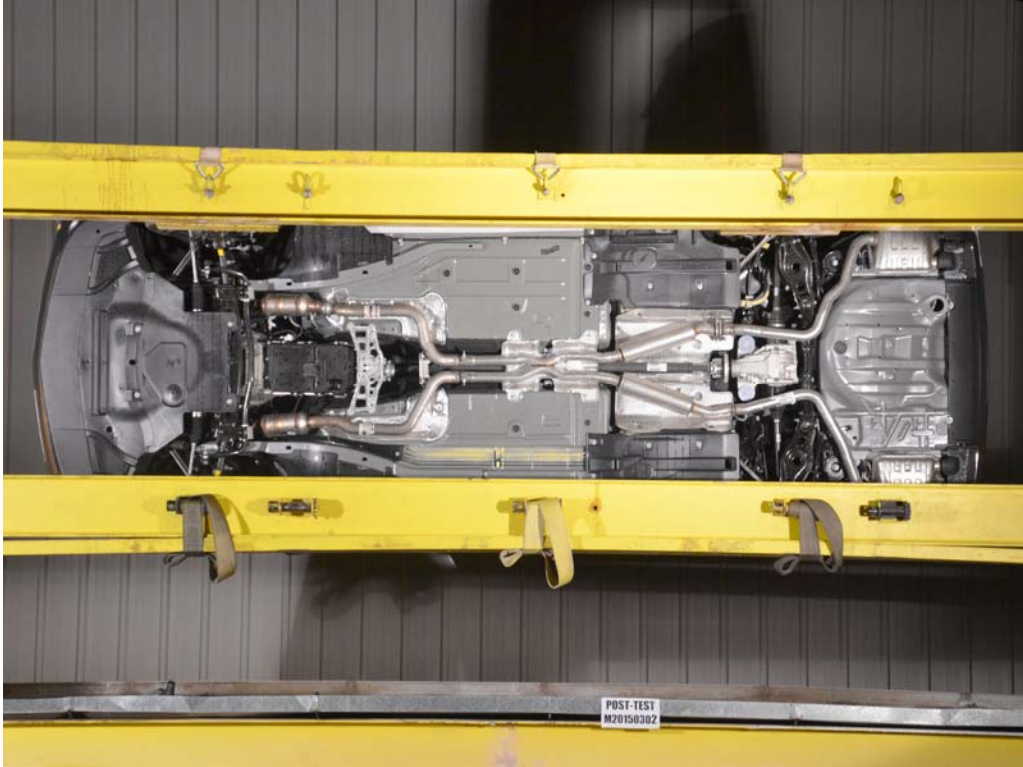


FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

2015 DODGE CHALLENGER SXT

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

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

Base Price: **\$26,995**

DODGE CHALLENGER SXT
 Exterior Color: Silver Metallic Clear Coat Exterior Paint
 Interior Color: Black / Longitude Interior Colors
 Interior: Premium Cloth Sport Seats
 Engine: 3.6L Inp V6 24-Valve VVT Engine
 Transmission: TorqueFlite Eight-Speed Automatic Transmission

STANDARD EQUIPMENT (ALL GAS REPLACED BY OPTIONAL EQUIPMENT)

FUNCTIONAL SAFETY FEATURES
 Advanced Multi-stage Front Airbags
 Supplemental Front Seat-Abducted Side Airbags
 Supplemental Side-Curtain Front and Rear Airbags
 Active Head Restraints
 Sport Brakes with ABS
 Sport Suspension
 Sport Mode
 Electronic Stability Control
 All-Speed Traction Control
 Faux-Brake Steering
 Tip Start
 Hill Start Assist
 Rain Brake Support
 Ready Alert Braking
 Speed Control
 Keyless Enter™ in Go™
 Sentry Key® Theft Deterrent System
 Power Windows with Front One-Touch-Down Feature
 Variable Intermittent Wiper/Washers
 Speed Sensitive Power Locks

INTERIOR FEATURES
 7-inch Reconfigurable Display
 Uconnect® 5.0 AM/FM/ST
 6 Speakers
 Integrated Voice Command with Bluetooth®
 Media Hub (SD, USB, Aux)
 Leather-Wrapped Steering Wheel with Audio Controls
 Tilt / Telescopic Steering Column
 Power 6-Way Driver Seat
 Power 4-Way Driver Lumbar Adjust
 Dual-Zone Automatic Temperature Control

Auto-Dimming Rearview Mirror w/Microphone
 Outside Temperature Display
 12-Volt Center Console Power Outlet
 60 / 40 Split Rear Folding Seat
 Premium Front and Rear Floor Mats

EXTERIOR FEATURES
 18-inch Satin Carbon Aluminum Wheels
 235/55R18 All-Season Performance Tires
 Automatic Projector Headlamps
 Daytime Running Lamps
 LED Spot Tail Lamps
 Power Mirrors with Manual Fold-Away
 Compact Spare Tire
 "Challenger" Badge
 Satin Chrome Grille
 Bright Fuel Filler Door
 18.5-Gallon Fuel Tank

OPTIONAL EQUIPMENT (May Replace Standard Equipment)
SXT 3.6L V6 21A \$995

DESTINATION CHARGE

TOTAL PRICE: *\$27,990

WARRANTY COVERAGE
 3-year or 100,000-mile Powertrain Limited Warranty,
 3-year or 50,000-mile Basic Limited Warranty,
 5-year or 100,000-mile Roadside Assistance, certain
 restrictions apply.
 Ask Dealer for a copy of the limited warranties or
 see your owner's manual for details.

5 YEAR / 100,000 MILE POWERTRAIN WARRANTY

Assembly Point of Entry: BRAMPTON, ONTARIO, CANADA
 Uconnect 5.0: 2015-2016
 VIN: 2C3CDZAG6H704472
 LVLN: 6493

For more information visit: www.dodge.com Chrysler Group LLC
 or call 1-800-4ADODGE

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy
23 MPG
 19 30
 combined city/hwy city highway
 4.3 gallons per 100 miles

Miles per gallon range from 13 to 58 MPG.
 The best vehicle rates 119 MPG.

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

Annual fuel cost \$2,300

Fuel Economy & Greenhouse Gas Rating (multiple only) Smog Rating (multiple only)
 5 6 10 10
 This vehicle emits 289 grams CO2 per mile. The best emits 8 grams per mile (multiple only). Producing and distributing fuel also produces CO2.

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 24 MPG and costs \$1,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPG is miles per gallon. Fuel economy, vehicle emissions and a significant source of climate change and smog.

fuel economy.gov
 Calculate personalized estimates and compare vehicles

GOVERNMENT 5-STAR SAFETY RATINGS

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

Frontal Crash	Driver	Not Rated
	Passenger	Not Rated

Based on the risk of injury in a frontal impact.
 Should ONLY be compared to other vehicles of similar size and weight.

Side Crash	Front seat	Not Rated
	Rear seat	Not Rated

Based on the risk of injury in a side impact.

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

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

PARTS CONTENT INFORMATION FOR VEHICLES IN THIS CARLINE:
 U.S., CANADIAN PARTS CONTENT: 61 %
 MAJOR SOURCES OF FOREIGN PARTS CONTENT: 27 %
 NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:
 FINAL ASSEMBLY POINT: BRAMPTON, ONTARIO, CANADA
 COUNTRY OF ORIGIN: ENGINE: MEXICO
 TRANSMISSION: UNITED STATES

Smog Performance
 This vehicle is equipped with bumpers that can withstand an impact of 25 miles per hour with no damage to the vehicle's body and safety systems although the bumper and related components may sustain damage. The bumper system on this vehicle conforms to the current Federal bumper standard of 2.5 miles per hour.

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

FIGURE 102. Monroney Label

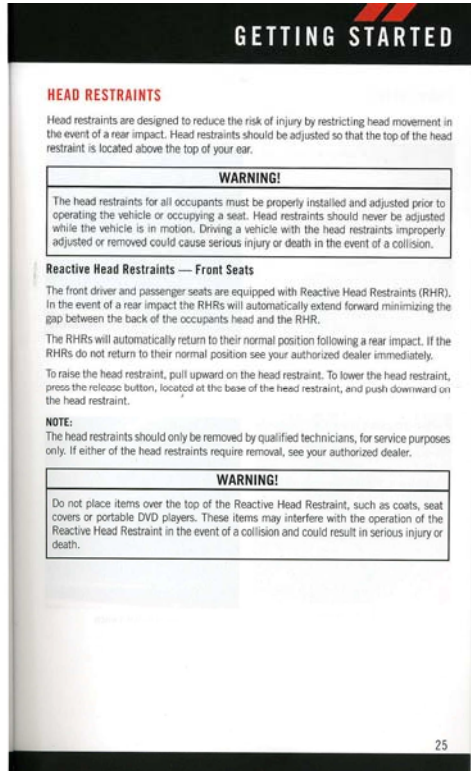


FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

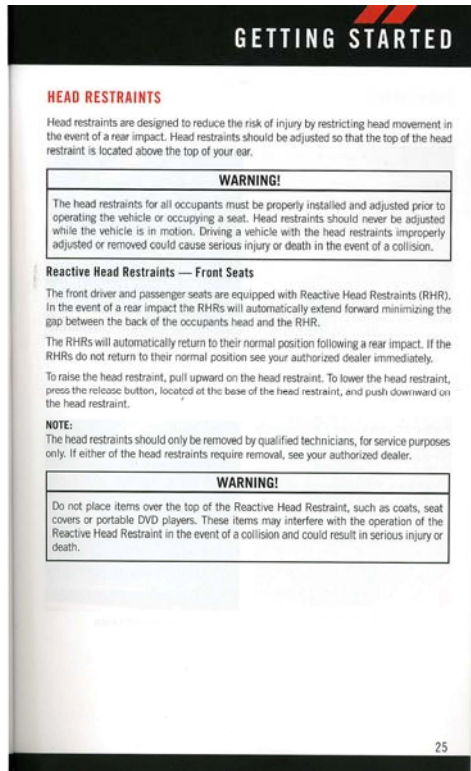


FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary vs. Time	B-1
2	Driver Head Acceleration (Y) Primary vs. Time	B-1
3	Driver Head Acceleration (Z) Primary vs. Time	B-1
4	Driver Head Resultant Acceleration Primary vs. Time	B-1
5	Driver Upper Thorax Rib Deflection (Y) vs. Time	B-2
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-2
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-2
8	Driver Thorax Rib Deflection Maximum vs. Time	B-2
9	Driver Anterior Abdominal Force (Y) vs. Time	B-3
10	Driver Middle Abdominal Force (Y) vs. Time	B-3
11	Driver Posterior Abdominal Force (Y) vs. Time	B-3
12	Driver Total Abdominal Force (Y) vs. Time	B-3
13	Driver Pubic Symphysis Force (Y) vs. Time	B-4
14	Passenger Head Acceleration (X) vs. Time Primary	B-5
15	Passenger Head Acceleration (Y) vs. Time Primary	B-5
16	Passenger Head Acceleration (Z) vs. Time Primary	B-5
17	Passenger Head Resultant Acceleration Primary vs. Time	B-5
18	Passenger Lower Spine T12 Acceleration (X) vs. Time	B-6
19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-6
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-6
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-7
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

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

Additional Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)
 Driver Lower Spine T12 Acceleration (Y)
 Driver Lower Spine T12 Acceleration (Z)
 Passenger Upper Thorax Rib Deflection (Y)
 Passenger Middle Thorax Rib Deflection (Y)
 Passenger Lower Thorax Rib Deflection (Y)

Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)

Vehicle Instrumentation Data

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

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

MDB Rear Acceleration (X)

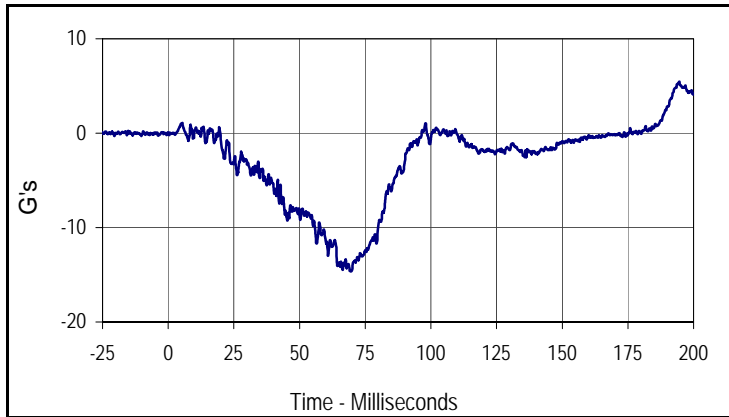
MDB Rear Acceleration (Y)

Left MDB Contact Switch

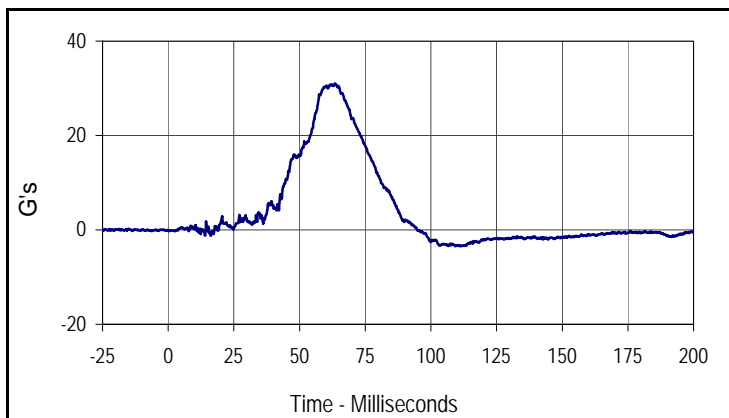
Right MDB Contact Switch

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

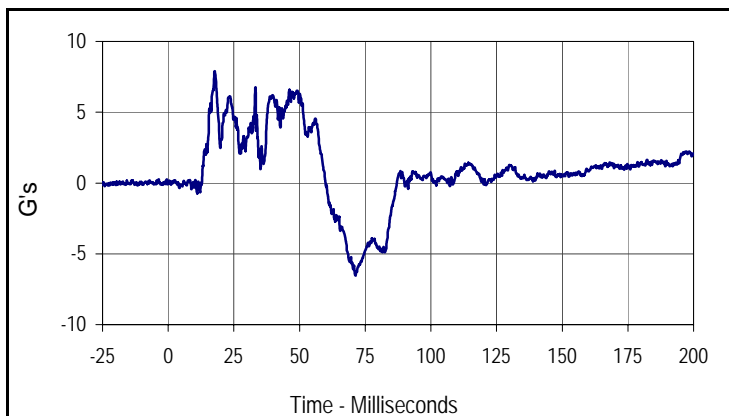
NHTSA No.: M20150302
 Test Date: 11/18/14



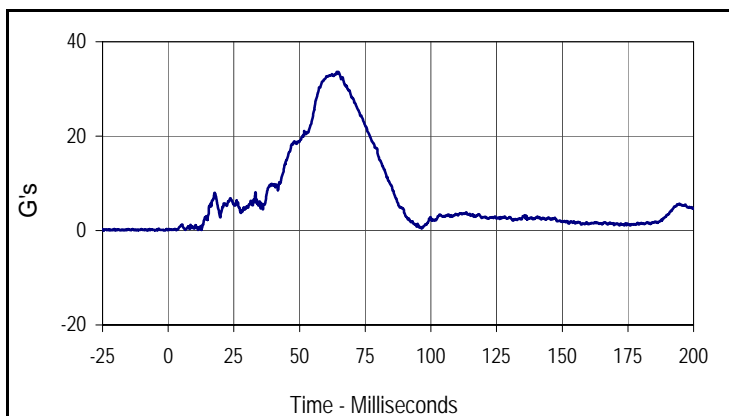
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
5.5	194.5	-14.7	69.6



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
31.0	63.5	-3.4	109.4



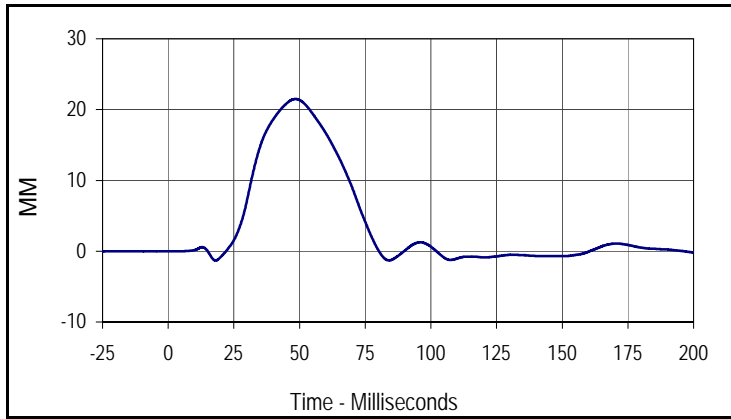
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
7.9	17.6	-6.5	71.3



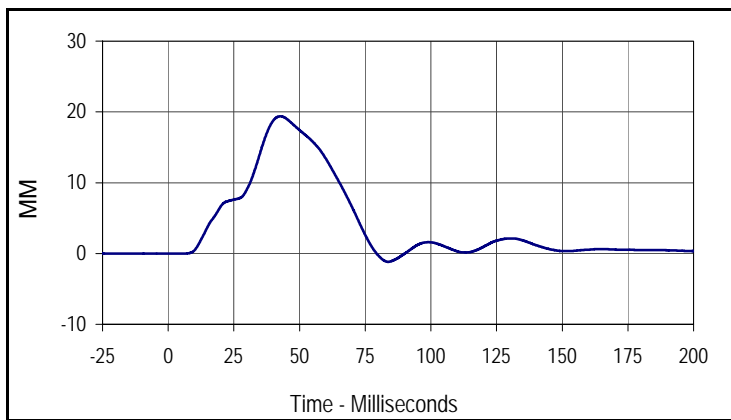
Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
33.6	64.8	0.0	3.1

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

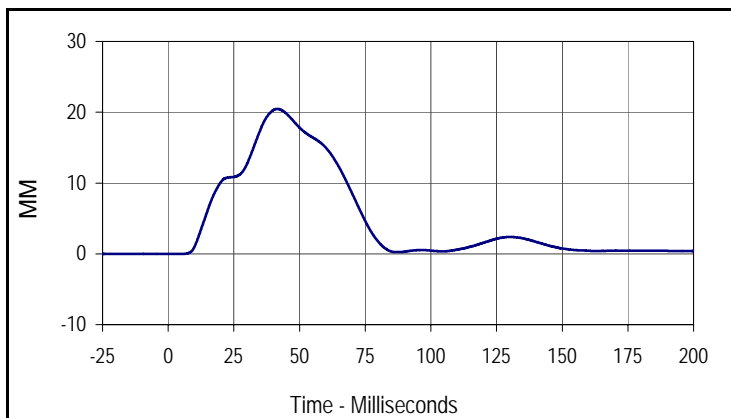
NHTSA No.: M20150302
 Test Date: 11/18/14



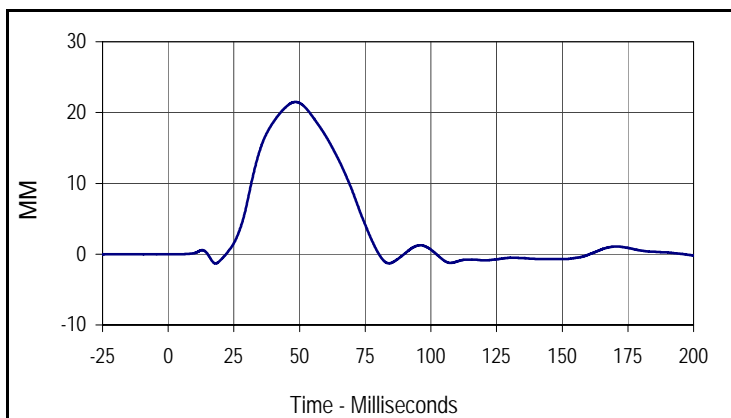
Curve Description			
Driver Upper Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
005	FIL	180	MM
Max	Time	Min	Time
21.5	48.5	-1.3	18.0



Curve Description			
Driver Middle Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	MM
Max	Time	Min	Time
19.4	42.7	-1.2	83.7



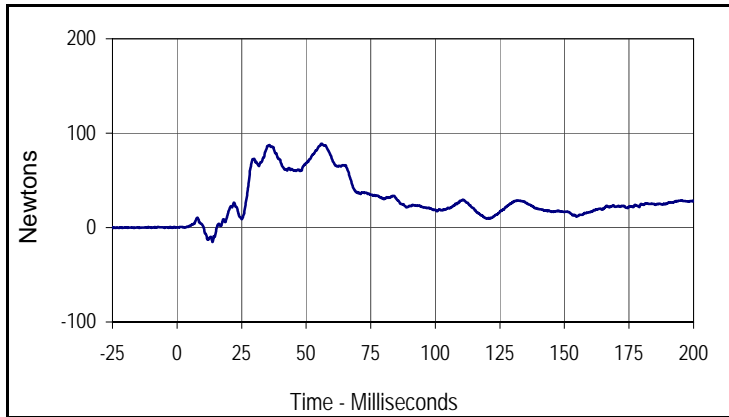
Curve Description			
Driver Lower Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
007	FIL	180	MM
Max	Time	Min	Time
20.5	41.6	0.0	1.3



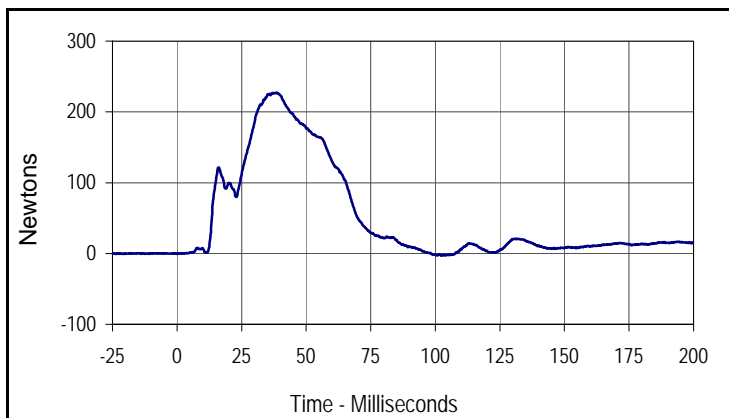
Curve Description			
Driver Thorax Rib Deflection Maximum			
Plot No.	Type	SAE Class	Units
010	FIL	180	MM
Max	Time	Min	Time
21.5	48.5	-1.3	18.0

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

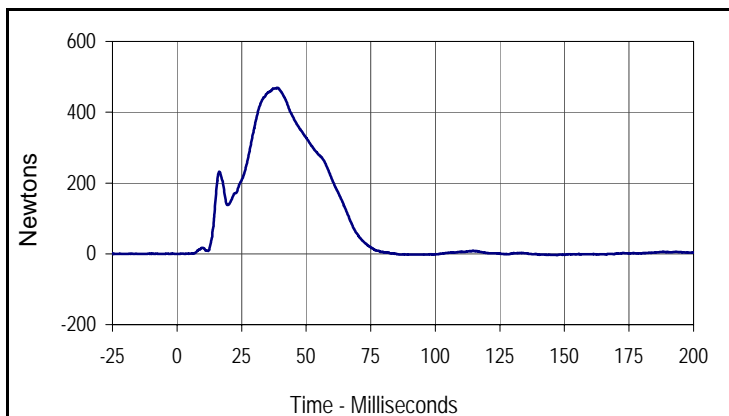
NHTSA No.: M20150302
 Test Date: 11/18/14



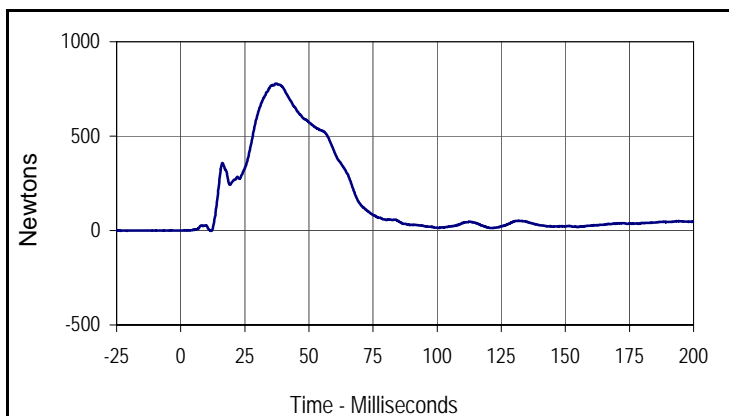
Curve Description			
Driver Anterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
88.9	55.9	-15.3	13.8



Curve Description			
Driver Middle Abdominal Force Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
227.1	38.6	-2.8	102.5



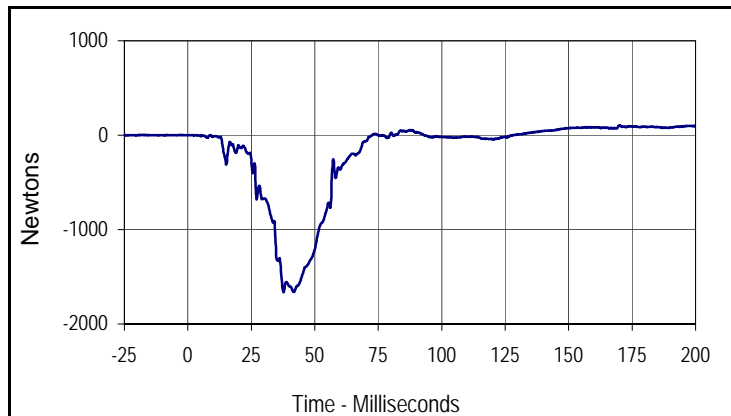
Curve Description			
Driver Posterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
011	FIL	600	Newtons
Max	Time	Min	Time
468.9	38.8	-3.5	147.1



Curve Description			
Driver Total Abdominal Force			
Plot No.	Type	SAE Class	Units
012	SUM	600	Newtons
Max	Time	Min	Time
778.4	37.3	-2.0	11.9

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

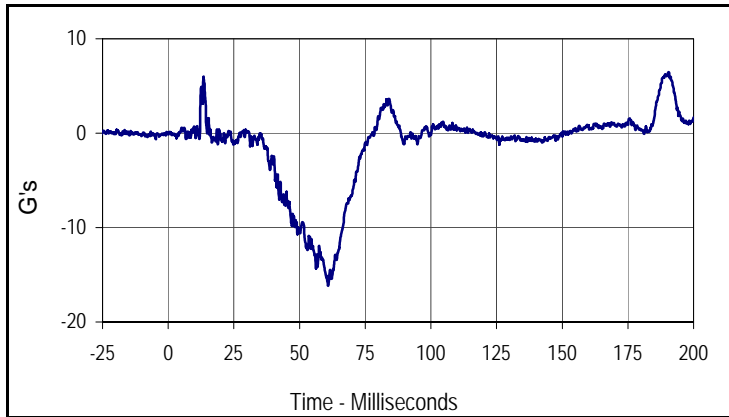
NHTSA No.: M20150302
 Test Date: 11/18/14



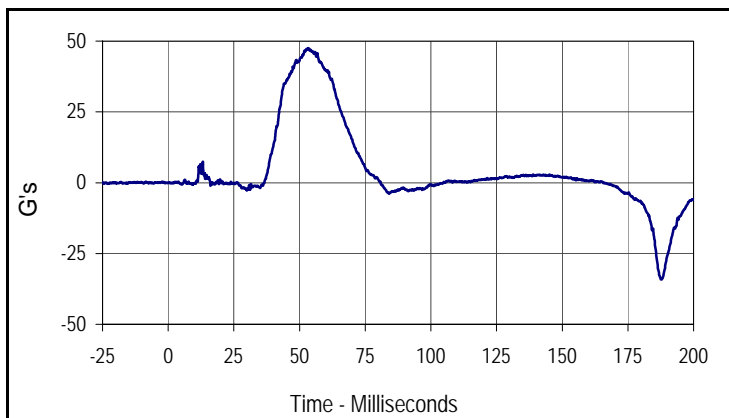
Curve Description			
Driver Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
104.5	170.0	-1663.6	37.7

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

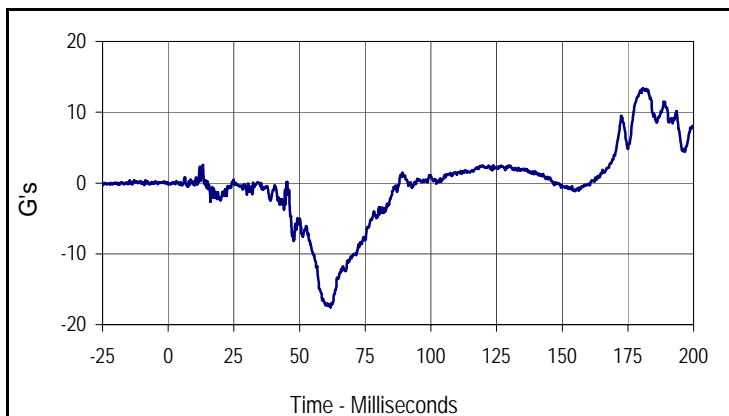
NHTSA No.: M20150302
 Test Date: 11/18/14



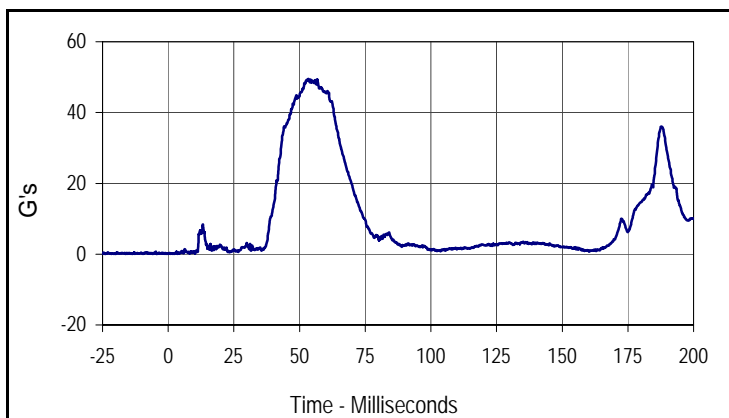
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
014	FIL	1000	G's
Max	Time	Min	Time
6.5	190.5	-16.2	60.9



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
47.5	53.4	-34.2	187.7



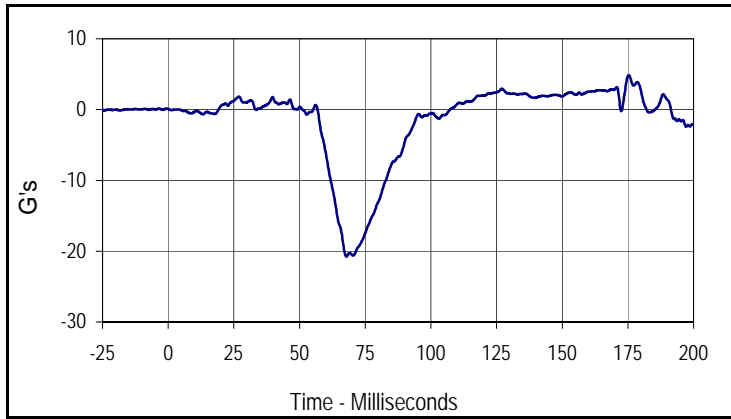
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
13.4	180.8	-17.6	61.8



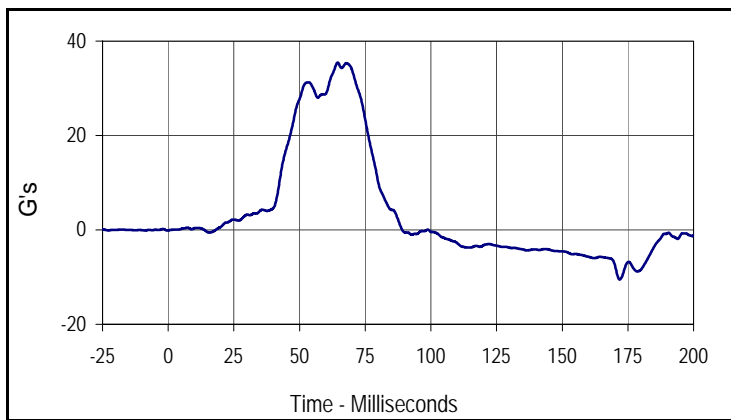
Curve Description			
Passenger Head Acceleration Resultant Primary			
Plot No.	Type	SAE Class	Units
017	RES	1000	G's
Max	Time	Min	Time
49.5	53.3	0.1	2.3

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

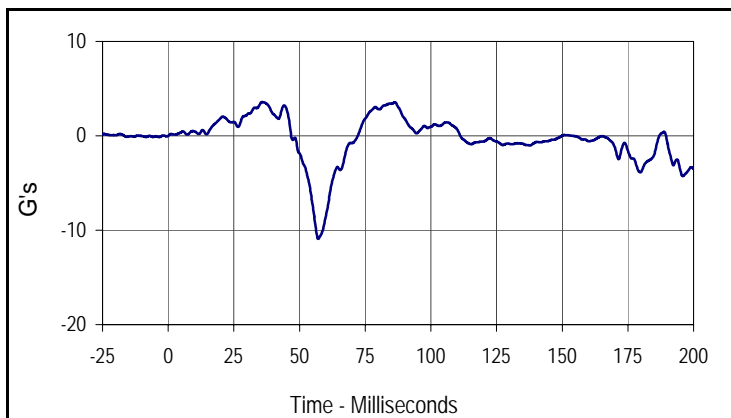
NHTSA No.: M20150302
 Test Date: 11/18/14



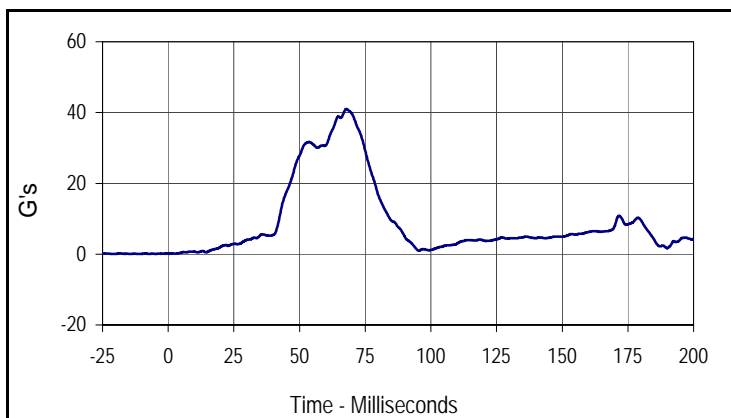
Curve Description			
Passenger Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
019	FIL	180	G's
Max	Time	Min	Time
4.8	175.3	-20.8	67.8



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
35.5	64.5	-10.5	171.9



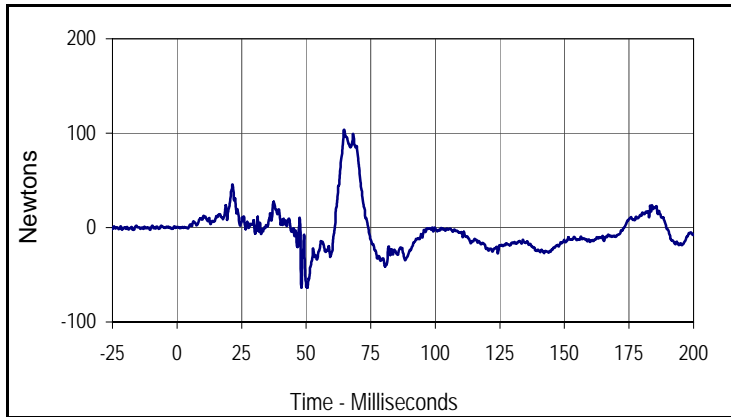
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
3.6	35.8	-10.9	57.1



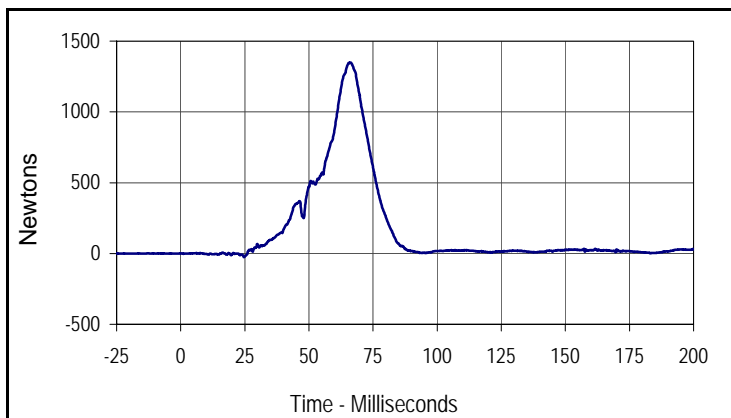
Curve Description			
Passenger Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
022	RES	180	G's
Max	Time	Min	Time
41.0	67.8	0.1	0.3

Test Vehicle: 2015 Dodge Challenger SXT 2-Door Coupe
 Test Program: NCAP MDB Side Impact Test

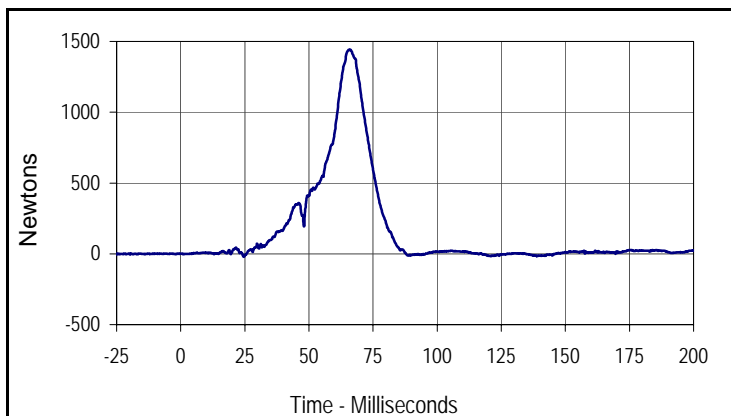
NHTSA No.: M20150302
 Test Date: 11/18/14



Curve Description			
Passenger Iliac Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
103.8	64.7	-63.9	48.1



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
1349.3	66.2	-25.0	24.7



Curve Description			
Passenger Total Pelvic Force			
Plot No.	Type	SAE Class	Units
018	SUM	600	Newtons
Max	Time	Min	Time
1441.6	65.6	-21.5	24.6

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

Test Program: ES2re External Measurements

Test Date: 11/13/14



ATD Serial No.: F037

Test I.D.: N/A

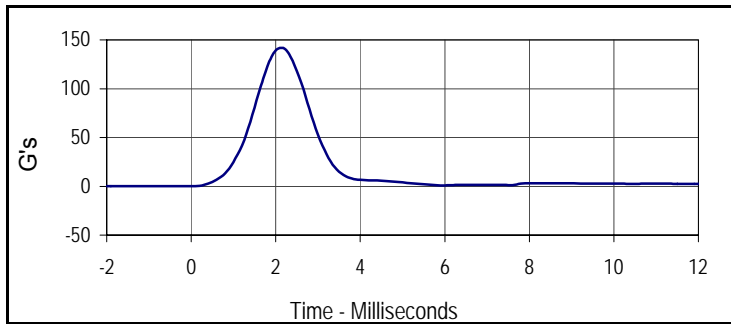
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
1 Sitting Height	mm	900 - 918	909	Pass
2 Seat to Shoulder Joint	mm	558 - 572	564	Pass
3 Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4 Seat to Hip Joint (Center of Bolt)	mm	97 - 103	99	Pass
5 Sole to Seat, Sitting	mm	333 - 451	395	Pass
6 Head Width	mm	152 - 158	156	Pass
7 Shoulder / Arm Width	mm	461 - 479	470	Pass
8 Thorax Width	mm	322 - 332	326	Pass
9 Abdomen Width	mm	273 - 287	280	Pass
10 Pelvis Lap Width	mm	359 - 373	363	Pass
11 Head Depth	mm	196 - 206	201	Pass
12 Thorax Depth	mm	262 - 272	270	Pass
13 Abdomen Width	mm	194 - 204	199	Pass
14 Pelvis Depth	mm	235 - 245	240	Pass
15 Back of Buttocks to Hip Joint (Center of Bolt)	mm	150 - 160	155	Pass
16 Back of Buttocks to Front Knee	mm	597 - 615	608	Pass
Overall Test Results				Pass

Test Program: ES2re Head Drop Test
 ATD Serial No.: F037

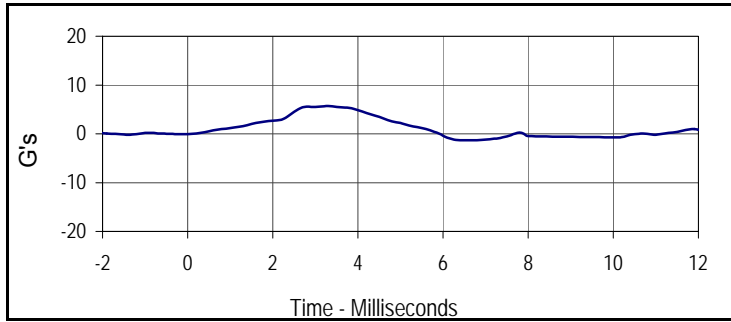
Test Date: 11/13/14
 Test I.D.: F037HD066



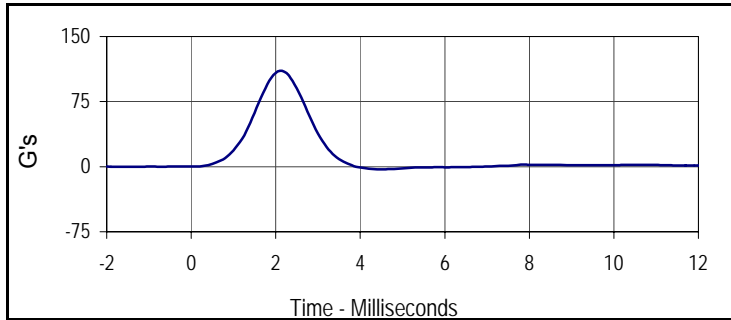
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	301	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.0	Pass
Peak Head Resultant Acceleration	G's	125 to 155	141.9	Pass
Peak Head X Acceleration	G's	≤15	5.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.8	Pass
Overall Test Results				Pass



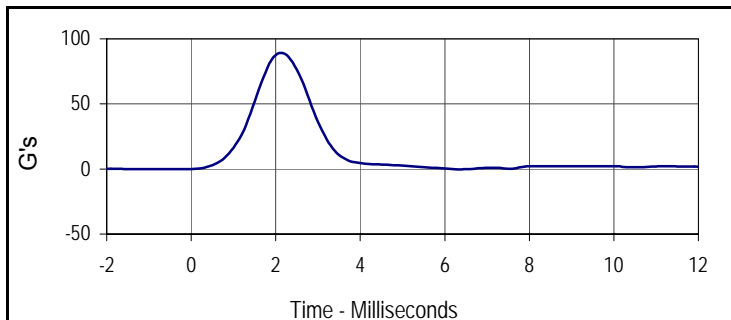
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
141.9	2.1	0.1	-1.6



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.7	3.3	-0.4	6.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
110.4	2.1	-3.1	4.5



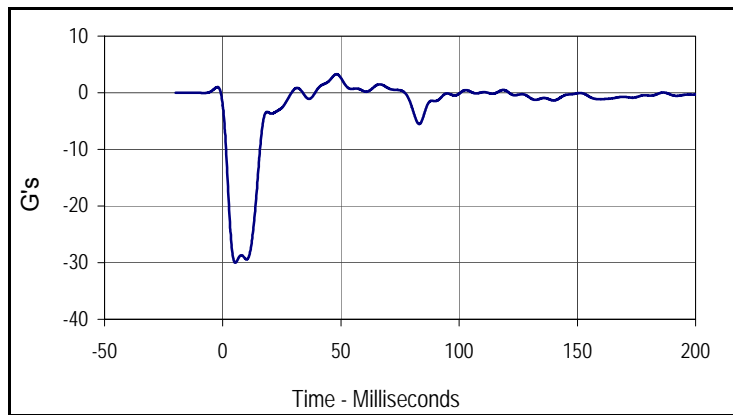
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
89.1	2.1	-0.3	6.4

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

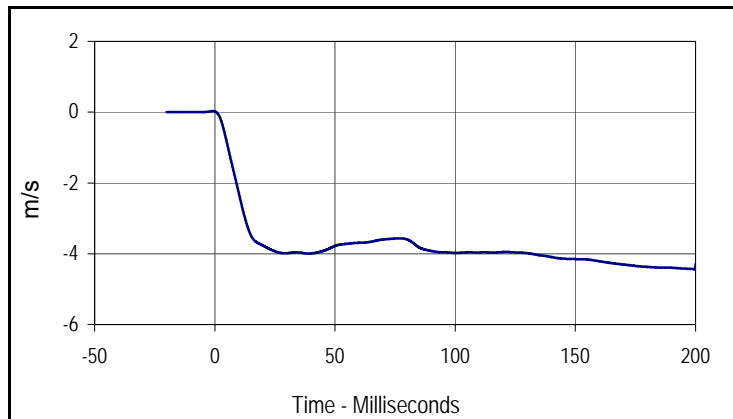
Test Date: 11/13/14
 Test I.D.: F037NB066



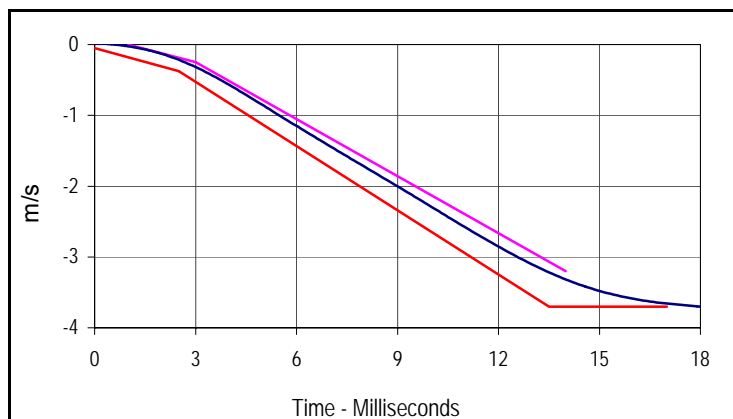
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	356	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass	
	Min		41.9	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	41.9	Pass	
Pendulum Velocity	m/s	3.3 to 3.5	3.42	Pass	
Headform Flexion	Max	Degrees	49 to 59	53.7	Pass
	Time	msec	54 to 66	59.2	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	62.7	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
3.3	48.1	-30.0	5.3



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.4	199.9



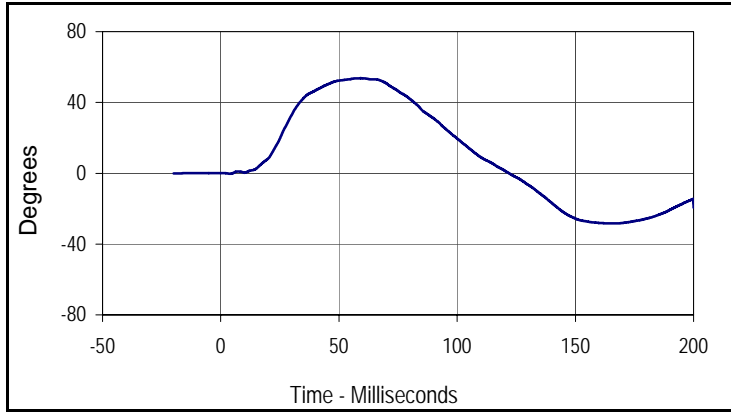
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.4	199.9

Velocity Corridors

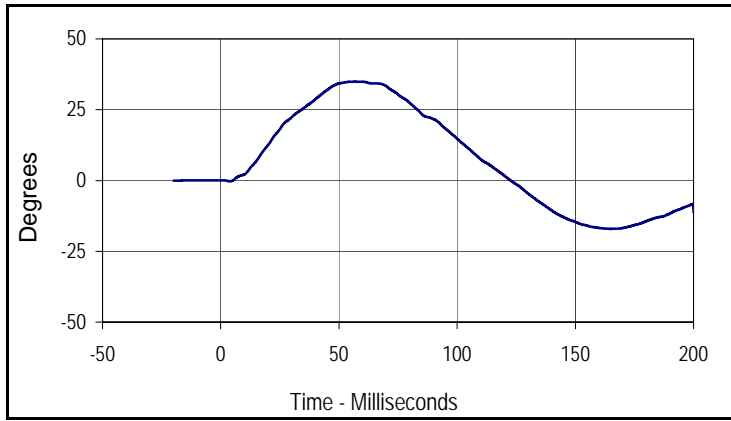
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

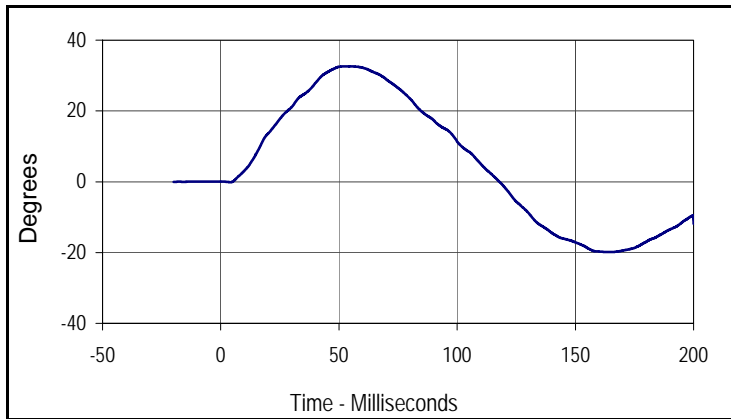
Test Date: 11/13/14
 Test I.D.: F037NB066



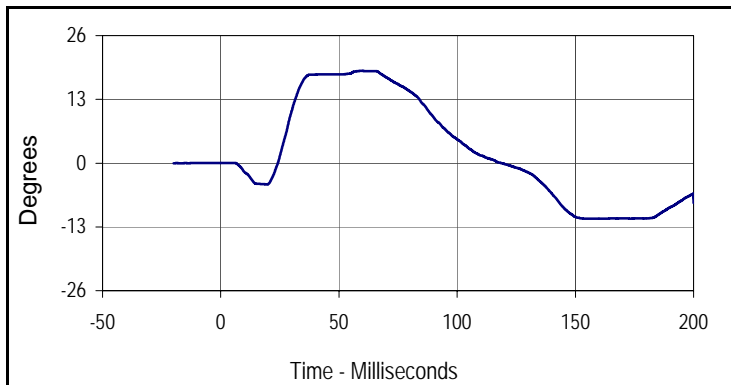
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
53.7	59.2	-28.3	164.7



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
34.9	56.7	-17.1	164.9



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
32.6	55.2	-19.9	164.6



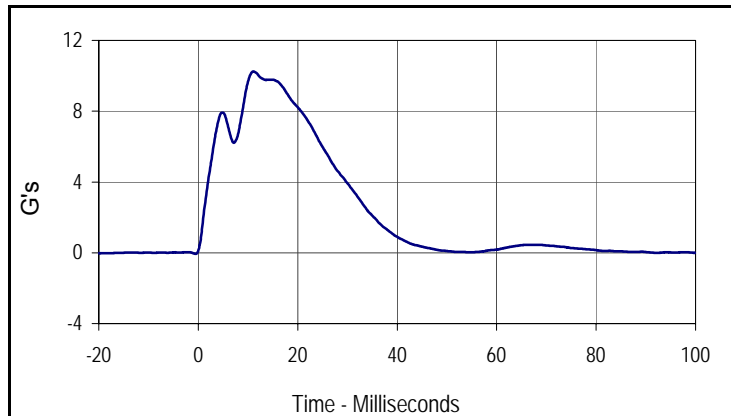
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
18.8	59.4	-11.3	156.4

Test Program: ES2re Shoulder Impact Test
 ATD Serial No.: F037

Test Date: 11/13/14
 Test I.D.: F037SH066



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	411	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.1	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.37	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.2	Pass
Overall Test Results				Pass



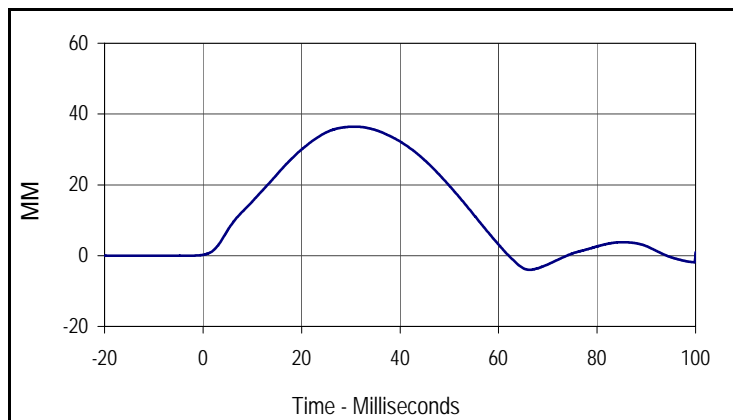
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.2	11.0	-0.1	-0.6

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 1

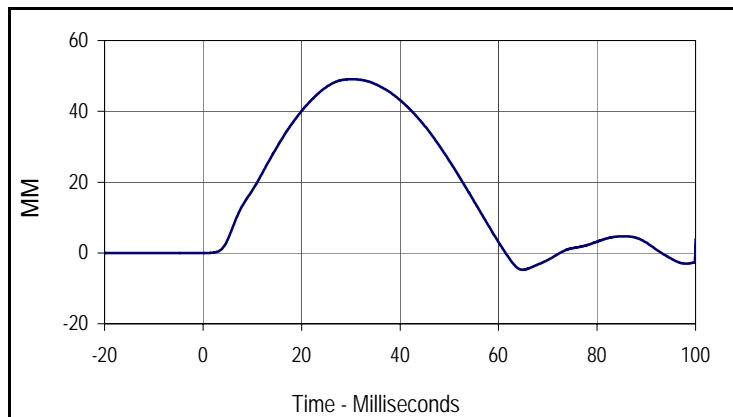
Test Date: 11/13/14
 Test I.D.: F037RB1066



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	466	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.2	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	36.4	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.1	Pass
Overall Test Results				Pass



Curve Description			
Upper Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
36.4	30.7	-4.0	66.3



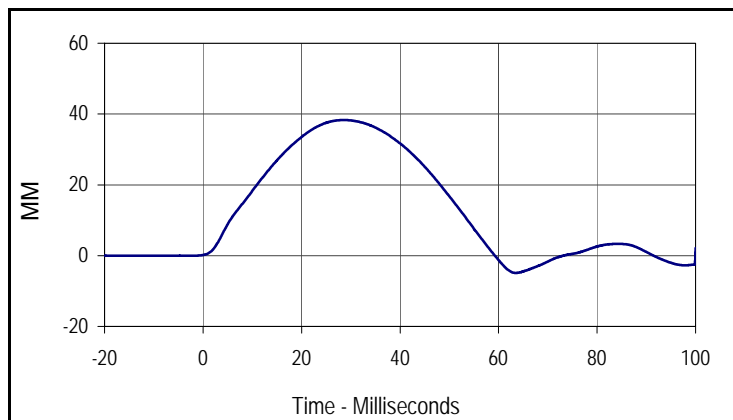
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.1	30.2	-4.7	64.9

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 2

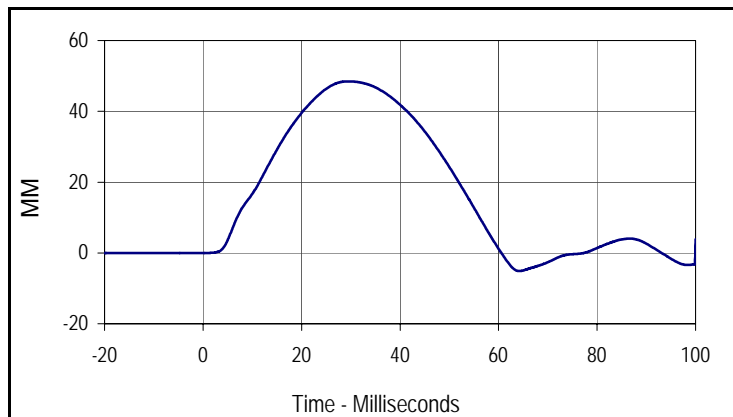
Test Date: 11/13/14
 Test I.D.: F037RB2066



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	521	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.3	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.5	Pass
Overall Test Results			Pass	Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.3	28.6	-4.9	63.5



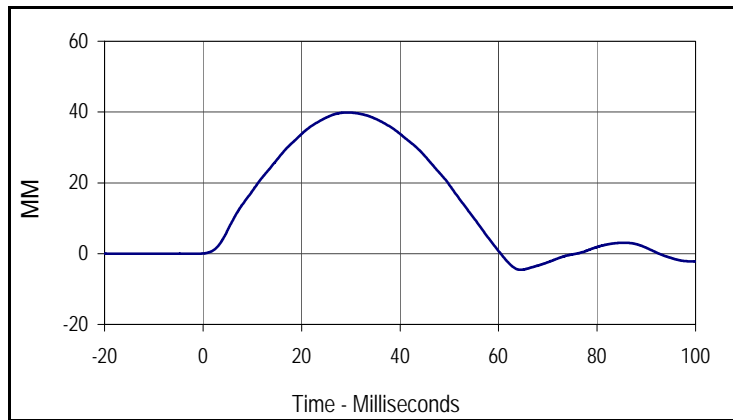
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.5	29.6	-5.1	64.2

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 3

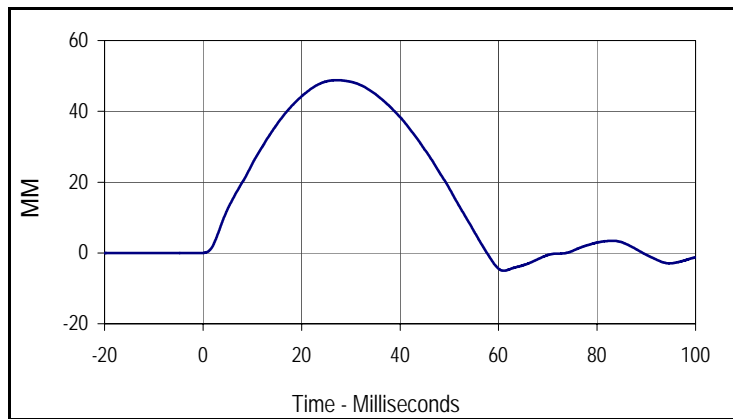
Test Date: 11/13/14
 Test I.D.: F037RB3066



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	576	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	39.9	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.8	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
39.9	29.3	-4.6	64.5



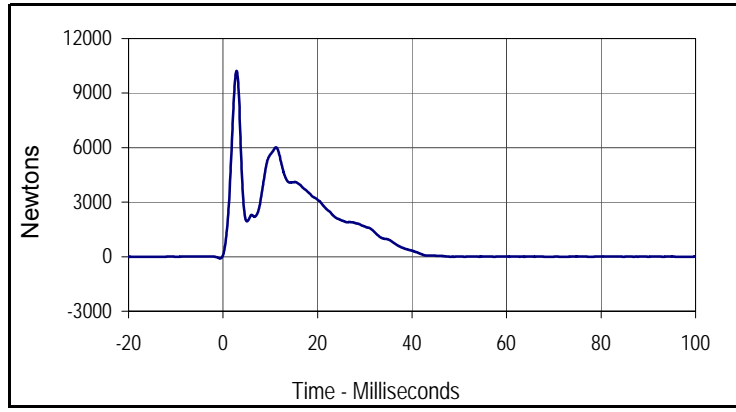
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.8	27.2	-5.0	61.0

Test Program: ES2re Thorax - Full Body Impact Test
 ATD Serial No.: F037

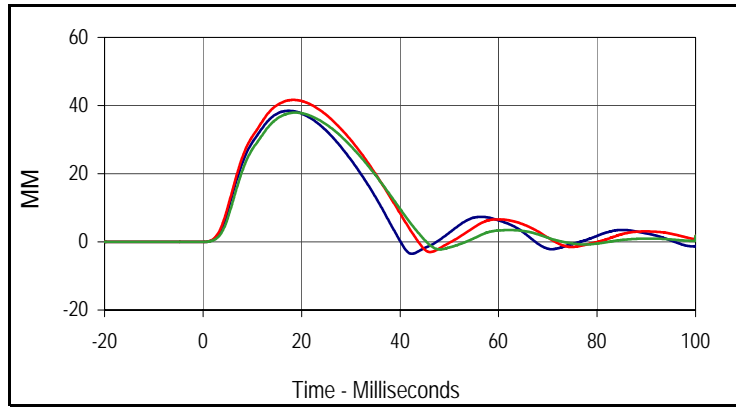
Test Date: 11/13/14
 Test I.D.: F037TH066



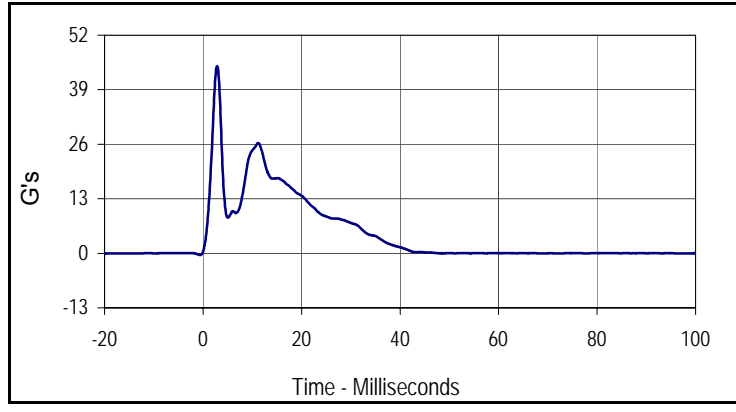
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	631	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.1	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.52	Pass
Peak Impactor Force	N	5100 to 6200	6016.1	Pass
	msec	> 6.0 msec	11.2	Pass
Peak Upper Rib Deflection	mm	34 to 41	38.5	Pass
Peak Middle Rib Deflection	mm	37 to 45	41.7	Pass
Peak Lower Rib Deflection	mm	37 to 44	37.9	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
10223.1	2.9	-90.7	-0.6



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
38.5	17.4	-3.5	42.4
Max (Middle)	Time	Min (Middle)	Time
41.7	18.4	-3.0	46.1
Max (Lower)	Time	Min (Lower)	Time
37.9	18.7	-2.2	48.1



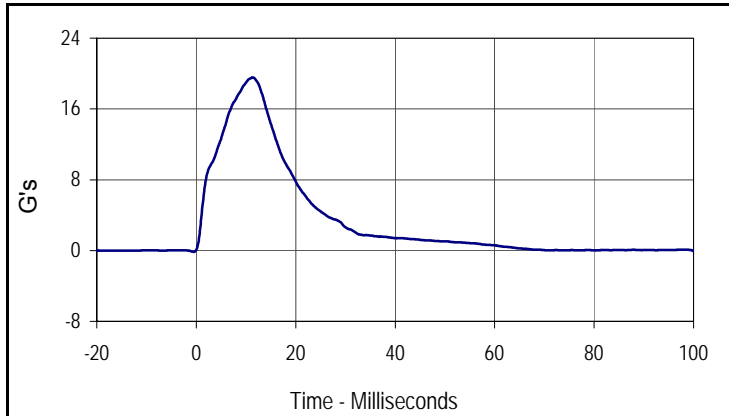
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
44.6	2.9	-0.4	-0.6

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

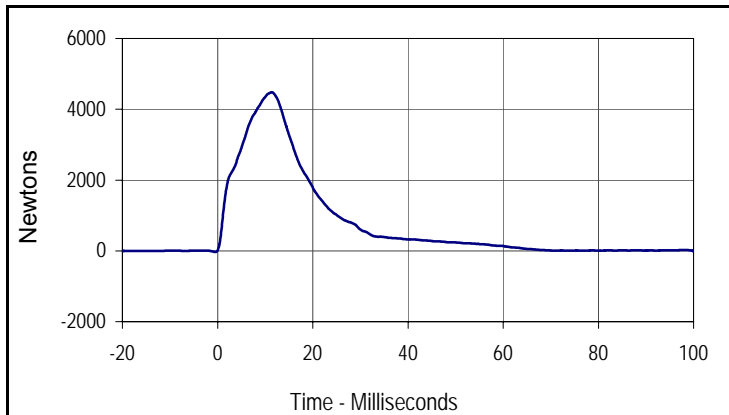
Test Date: 11/13/14
 Test I.D.: F037ABD066



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	686	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.2	Pass
Probe Velocity	m/s	3.9 to 4.1	4.03	Pass
Peak Impactor Force	N	4000 to 4800	4479.2	Pass
	msec	10.6 to 13.0	11.4	Pass
Sum of Abdominal Forces	N	2200 to 2700	2435.2	Pass
	msec	10.0 to 12.3	10.5	Pass
Overall Test Results				Pass



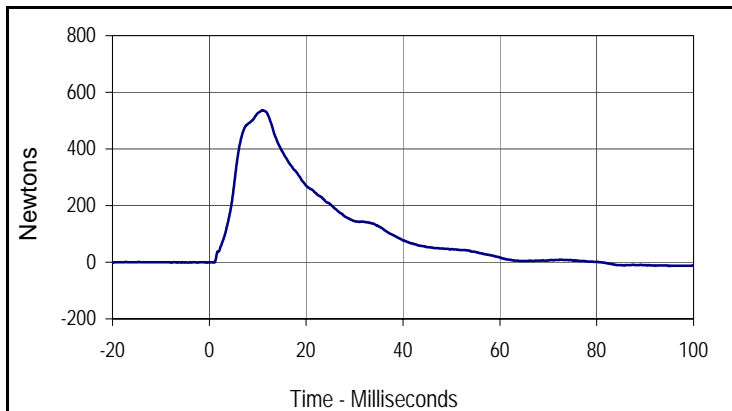
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
19.6	11.4	-0.1	-0.5



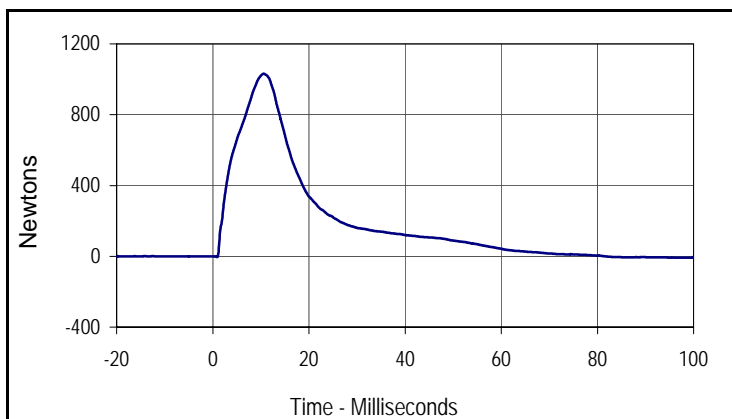
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4479.2	11.4	-32.9	-0.5

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

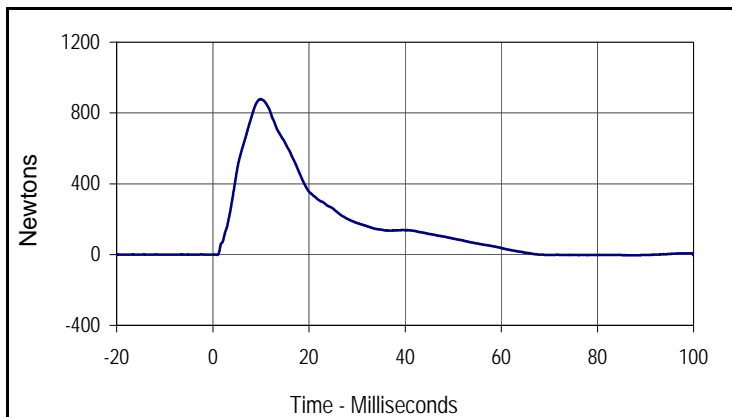
Test Date: 11/13/14
 Test I.D.: F037ABD066



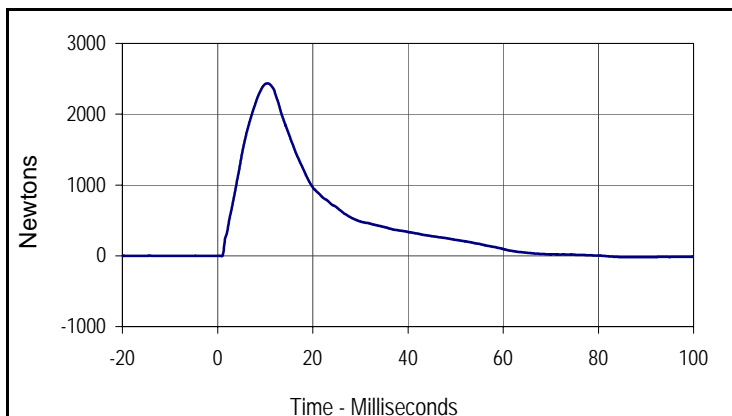
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
536.4	11.0	-13.0	95.0



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
1031.4	10.6	-8.4	99.2



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
877.9	10.0	-6.3	170.0



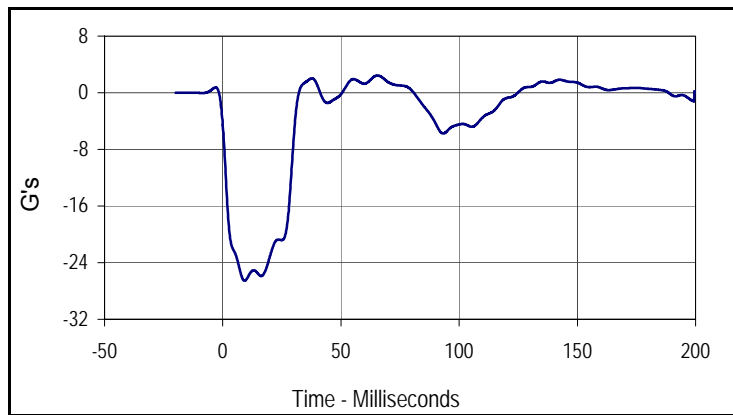
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtons
Max	Time	Min	Time
2435.2	10.5	-19.8	85.5

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

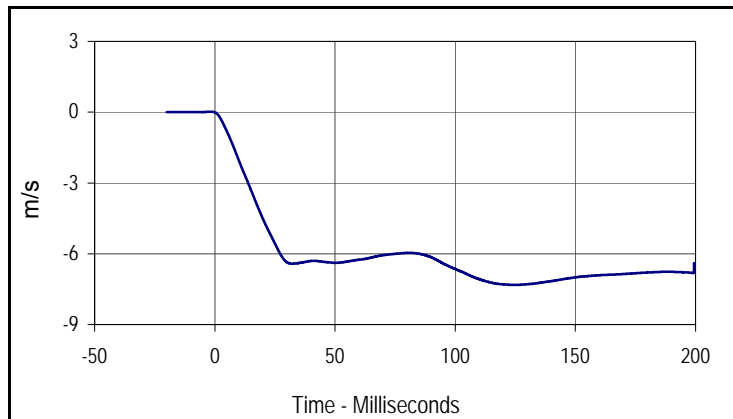
Test Date: 11/13/14
 Test I.D.: F037LB066



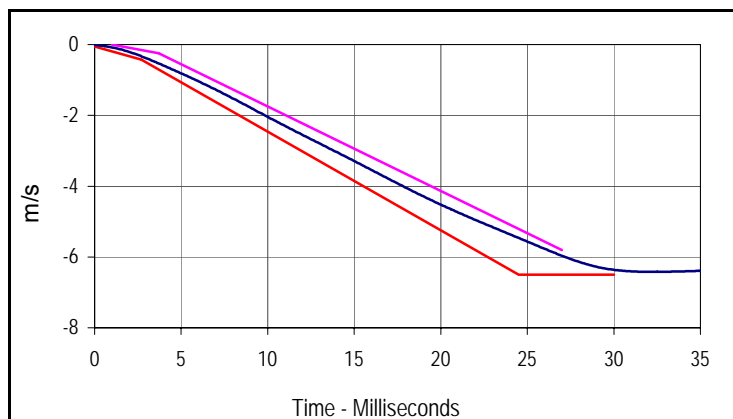
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	741	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.4	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.01	Pass
Headform Rotation	Max	45 to 55	51.9	Pass
	Time	39 to 53	42.3	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	44.0	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
2.4	66.1	-26.6	9.8



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-7.3	125.4



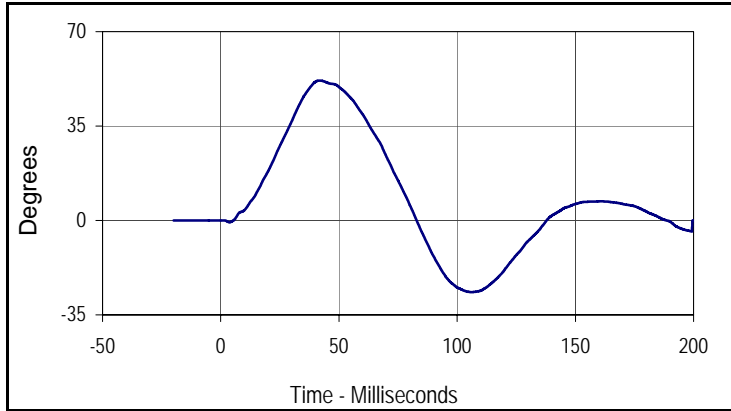
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-7.3	125.4

Velocity Corridors

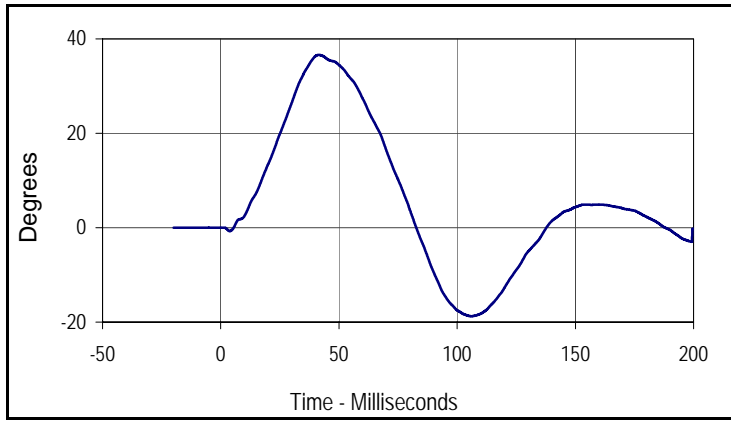
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

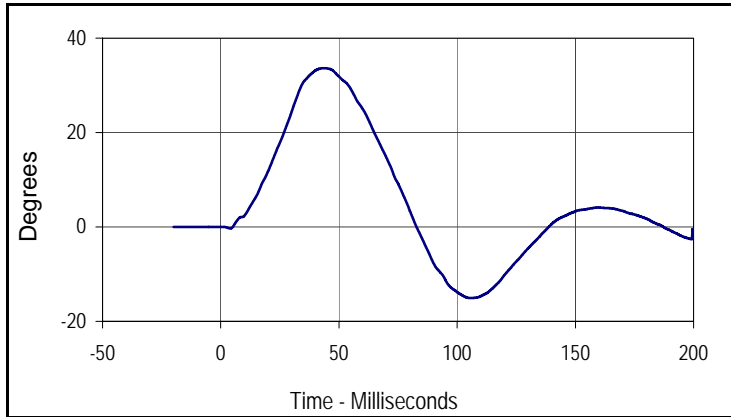
Test Date: 11/13/14
 Test I.D.: F037LB066



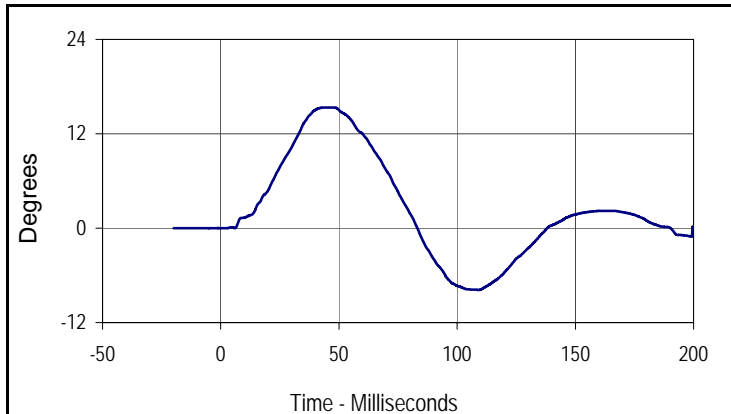
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
51.9	42.3	-26.6	106.8



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
36.6	42.0	-18.8	106.6



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
33.6	44.2	-15.1	106.4



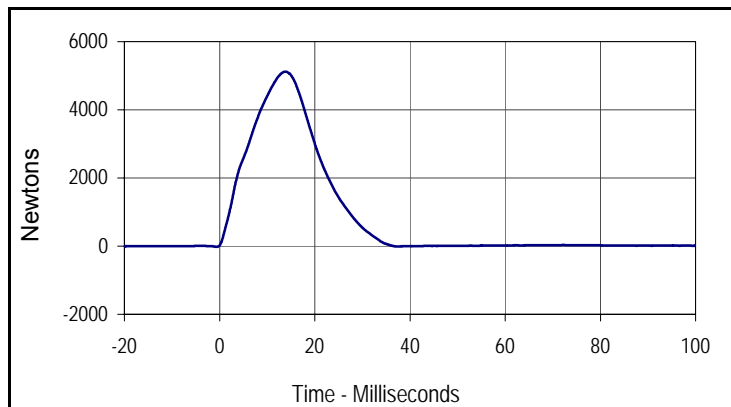
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
15.3	44.1	-7.8	109.7

Test Program: ES2re Pelvis Impact Test
 ATD Serial No.: F037

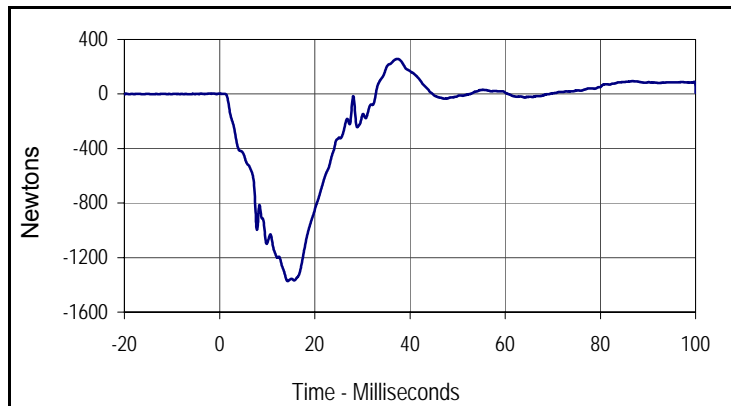
Test Date: 11/13/14
 Test I.D.: F037PL066



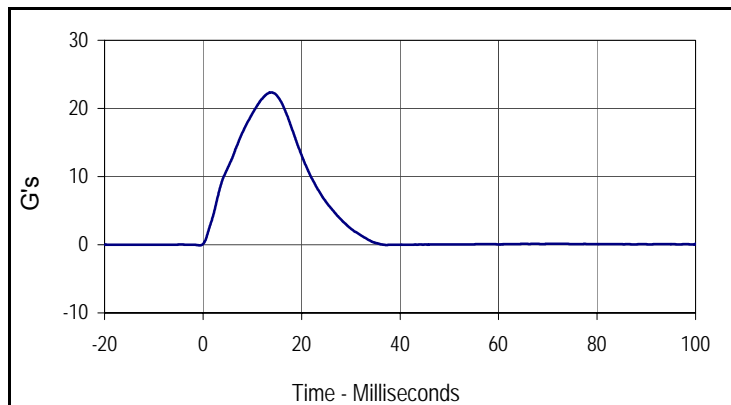
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	796	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	42.4	Pass
	Min		41.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.4	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Impactor Force	N	4700 to 5400	5121.5	Pass
	msec	11.8 to 16.1	13.8	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1372.7	Pass
	msec	12.2 to 17.0	14.3	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
5121.5	13.8	-19.6	-0.7



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
257.2	37.3	-1372.7	14.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
22.4	13.8	-0.1	-0.7

Test Program: SID IIs External Measurements
 ATD Serial No.: 307

Test Date: 11/14/14
 Test I.D.: N/A



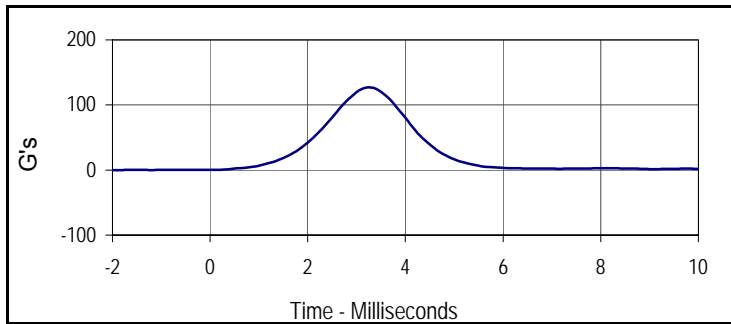
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	43	Pass
A Sitting Height	mm	772 - 788	778	Pass
B Shoulder Pivot Height	mm	437 - 453	443	Pass
C H-Point Height	mm	79 - 89	85	Pass
D H-Point from Seatback	mm	141 - 151	144	Pass
E Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F Thigh Clearance	mm	119 - 135	128	Pass
G Head Breadth	mm	140 - 148	145	Pass
H Head Back from Backline	mm	40 - 46	43	Pass
I Head Depth	mm	178 - 188	185	Pass
J Head Circumference	mm	541 - 551	546	Pass
K Buttock to Knee Length	mm	514 - 540	525	Pass
L Popliteal Height	mm	343 - 369	351	Pass
M Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N Buttock Popliteal Length	mm	416 - 442	432	Pass
O Chest Depth w/o Jacket	mm	195 - 211	205	Pass
P Foot Length	mm	216 - 232	223	Pass
Q Hip Breadth with Pelvic Plug	mm	313 - 323	319	Pass
R Arm Length	mm	249 - 259	254	Pass
S Knee Joint to Seatback	mm	477 - 493	483	Pass
V Shoulder Width	mm	341 - 357	351	Pass
W Foot Width	mm	78 - 94	89	Pass
Y Chest Circumference with Jacket	mm	851 - 881	872	Pass
Z Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results				Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 307

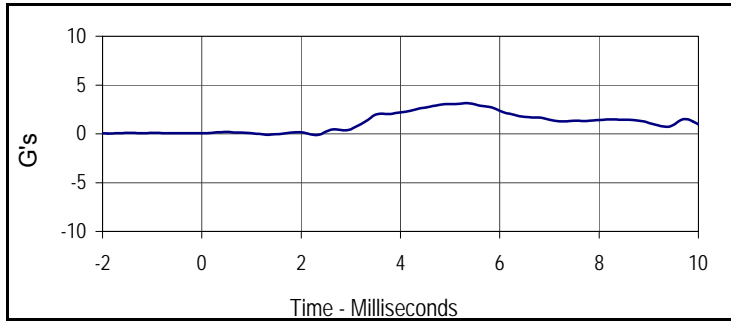
Test Date: 11/14/14
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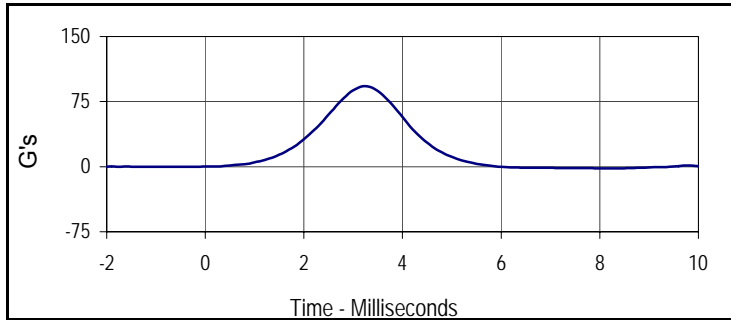
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	324	Pass
Temperature During Soak	Max	18.9 to 25.6	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.8	Pass
Peak Head Resultant Acceleration	G's	115 to 137	126.9	Pass
Peak Head X Acceleration	G's	<15	3.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.7	Pass
Overall Test Results				Pass



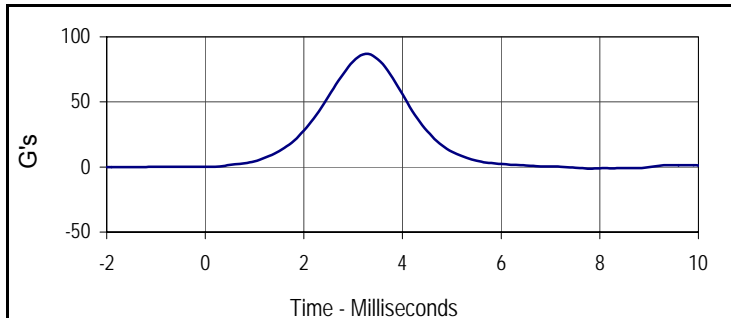
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
126.9	3.3	0.1	-2.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.1	5.3	-0.1	2.3



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
92.7	3.2	-2.0	8.1



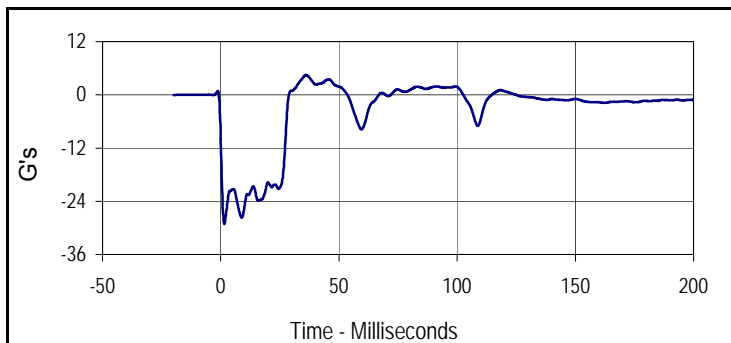
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
86.9	3.3	-1.2	7.8

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

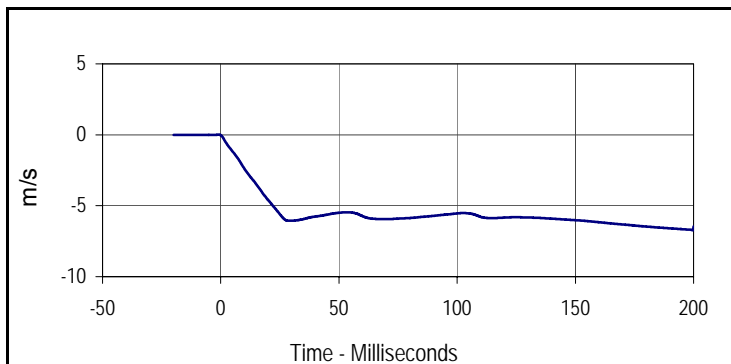
Test Date: 11/14/14
 Test I.D.: 307NB075



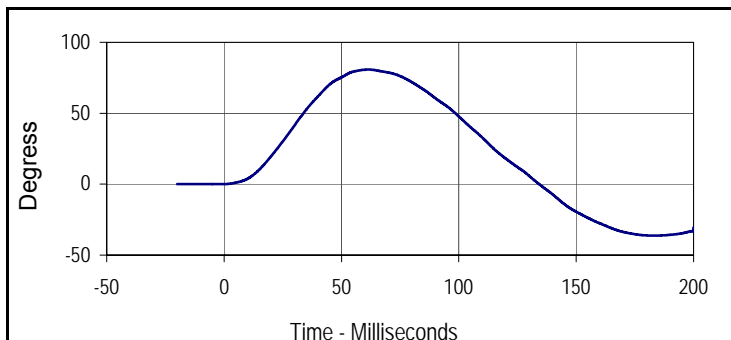
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	369	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass	
	Min		42.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	42.7	Pass	
Pendulum Velocity	m/s	5.51 to 5.63	5.53	Pass	
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.39	Pass
	15 msec	m/s	-3.30 to -4.10	-3.48	Pass
	20 msec	m/s	-4.40 to -5.40	-4.59	Pass
	25 msec	m/s	-5.40 to -6.10	-5.60	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.06	Pass
D-Plane Rotation	Max	Degrees	71 to 81	80.8	Pass
	Time	msec	50 to 70	61.5	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-40.1	Pass	
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	123.0	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
4.5	0.0	-29.1	0.0



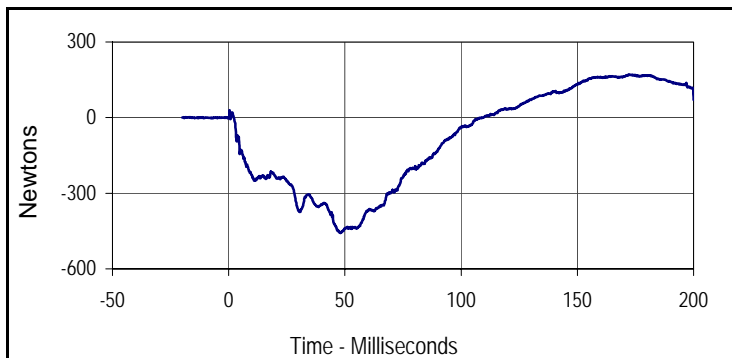
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.8	-6.7	199.9



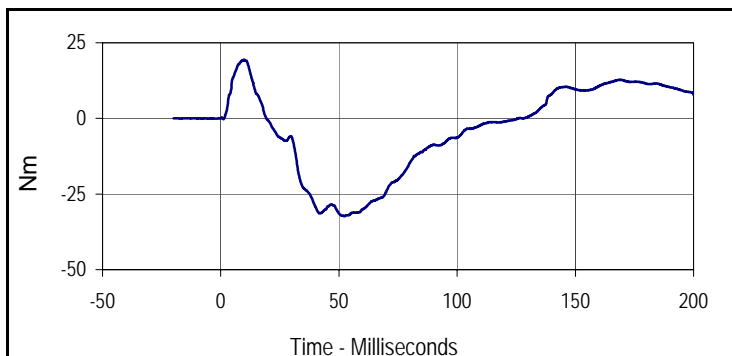
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
80.8	61.5	-36.2	183.5

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

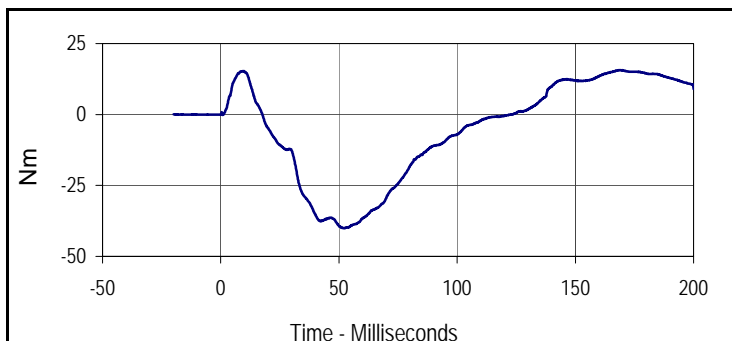
Test Date: 11/14/14
 Test I.D.: 307NB075



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
171.3	172.1	-457.9	48.1



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
19.3	9.8	-32.3	52.4



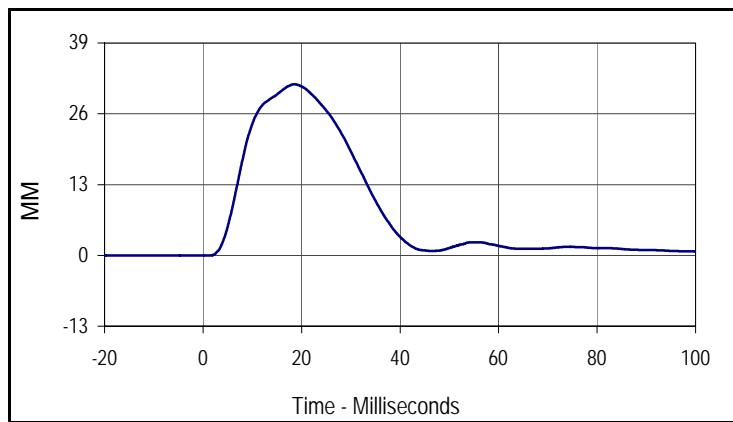
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
15.7	168.7	-40.1	52.3

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 307

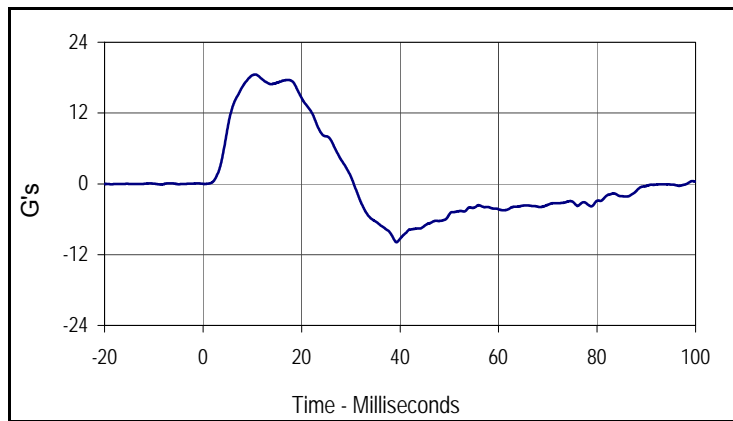
Test Date: 11/14/14
 Test I.D.: 307SH075



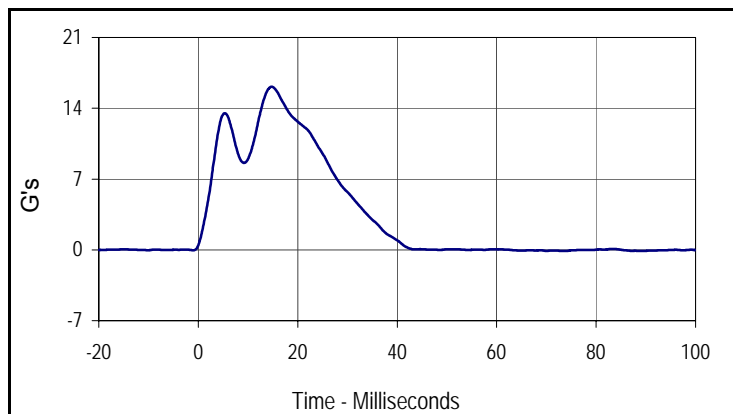
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	414	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.7	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.33	Pass
Peak Shoulder Deflection	mm	28 to 37	31.4	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.5	Pass
Peak Impactor Acceleration	G's	13 to 18	16.1	Pass
Overall Test Results			Pass	Pass



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.4	18.5	0.0	1.2



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.5	10.6	-9.9	39.3



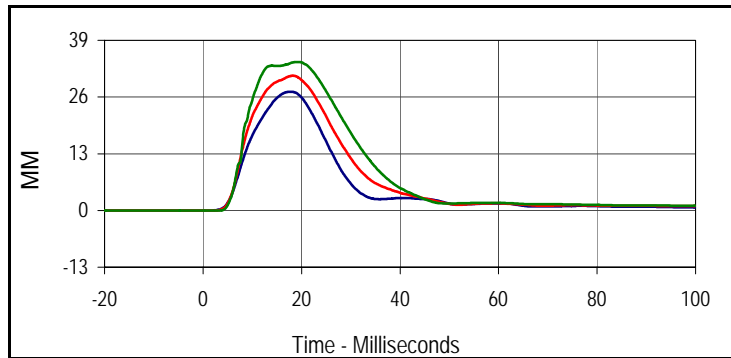
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.1	14.7	-0.2	0.0

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

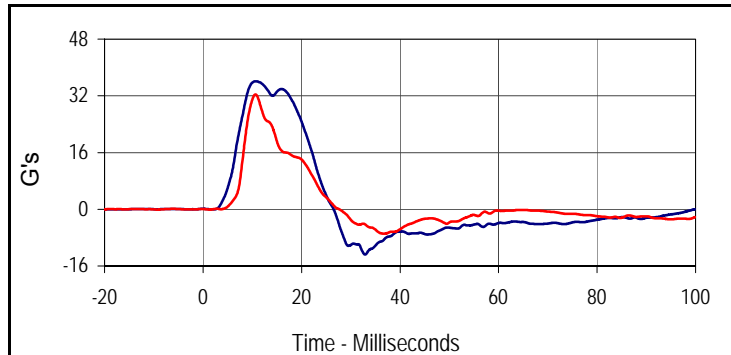
Test Date: 11/14/14
 Test I.D.: 307TWA075



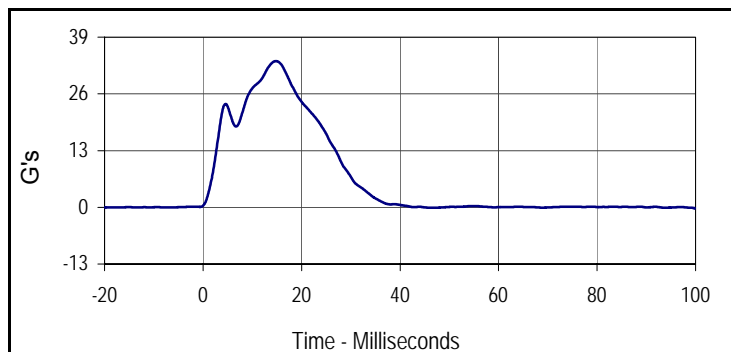
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	459	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.60	Pass
Peak Shoulder Deflection	mm	31 to 40	33.1	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.2	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.9	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.0	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.1	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.4	Pass
Peak Impactor Acceleration	G's	30 to 36	33.5	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.2	17.6	0.0	-8.4
Middle Thorax Deflection			
Max	Time	Min	Time
30.9	18.2	0.0	-4.4
Lower Thorax Deflection			
Max	Time	Min	Time
34.0	18.9	0.0	-9.8



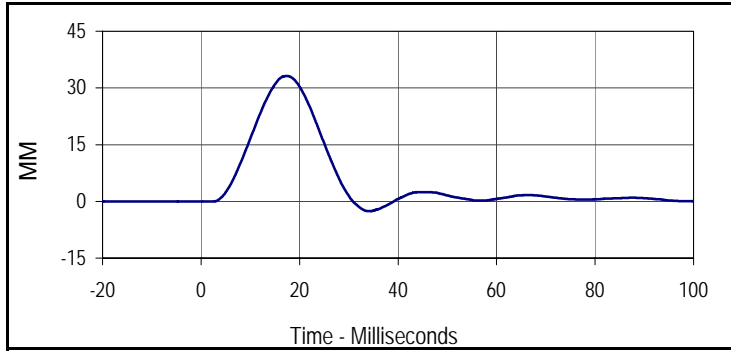
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.1	10.6	-12.8	32.9
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.4	10.6	-6.9	36.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.5	14.8	-0.2	99.9

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

Test Date: 11/14/14
 Test I.D.: 307TWA075



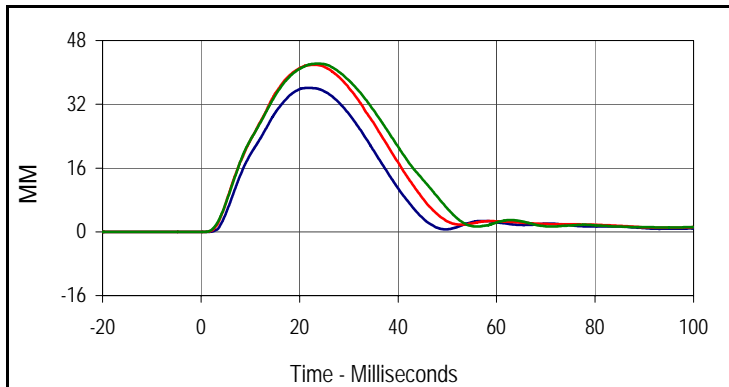
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
33.1	17.2	-2.6	34.3

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 307

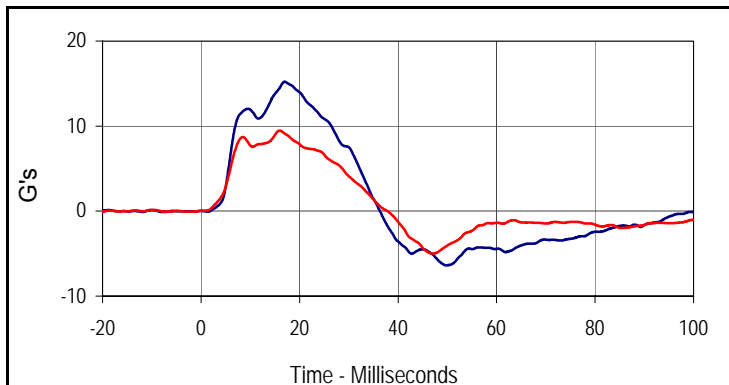
Test Date: 11/14/14
 Test I.D.: 307TWOA075



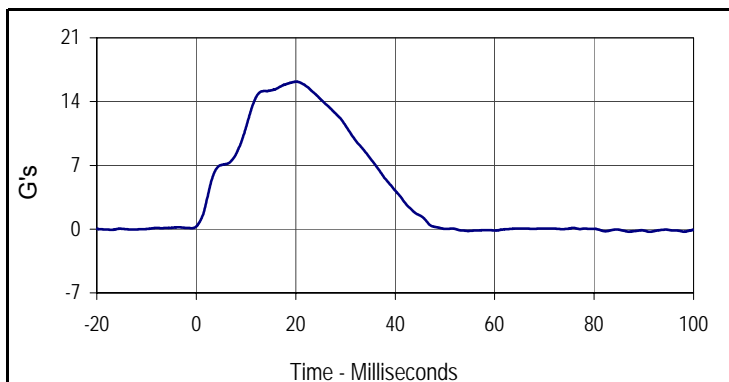
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	504	Pass
Temperature During Soak	Max	18.9 to 25.6	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.4	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.35	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	36.1	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	41.9	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	42.2	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.2	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.5	Pass
Peak Impactor Acceleration	G's	14 to 18	16.2	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.1	21.9	0.0	-15.1
Middle Thorax Deflection			
Max	Time	Min	Time
41.9	23.1	0.0	-10.3
Lower Thorax Deflection			
Max	Time	Min	Time
42.2	23.7	0.0	-13.4



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	17.0	-6.4	49.8
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.5	15.9	-5.0	47.0



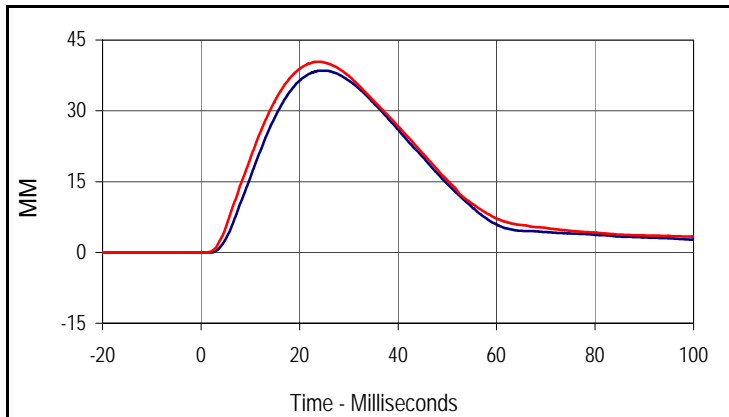
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.2	20.1	-0.3	91.2

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 307

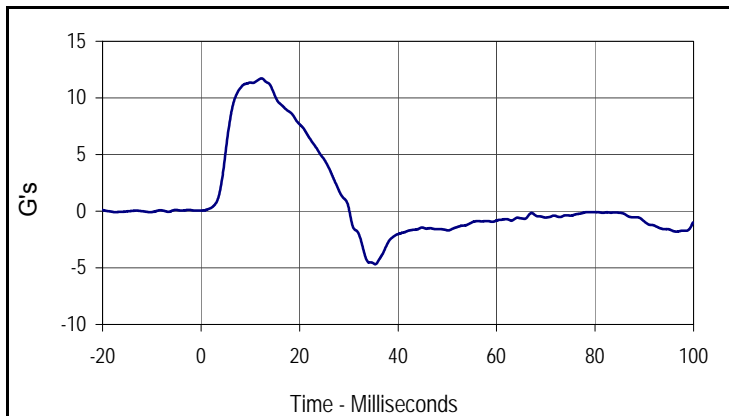
Test Date: 11/14/14
 Test I.D.: 307ABD075



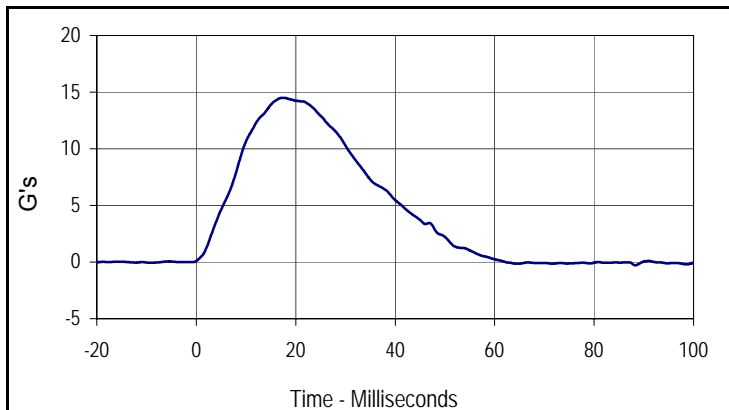
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	549	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.5	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	40.4	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.7	Pass
Peak Impactor Acceleration	G's	12 to 16	14.5	Pass
Overall Test Results				Pass



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.5	25.0	0.0	-3.7
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
40.4	23.8	0.0	-8.7

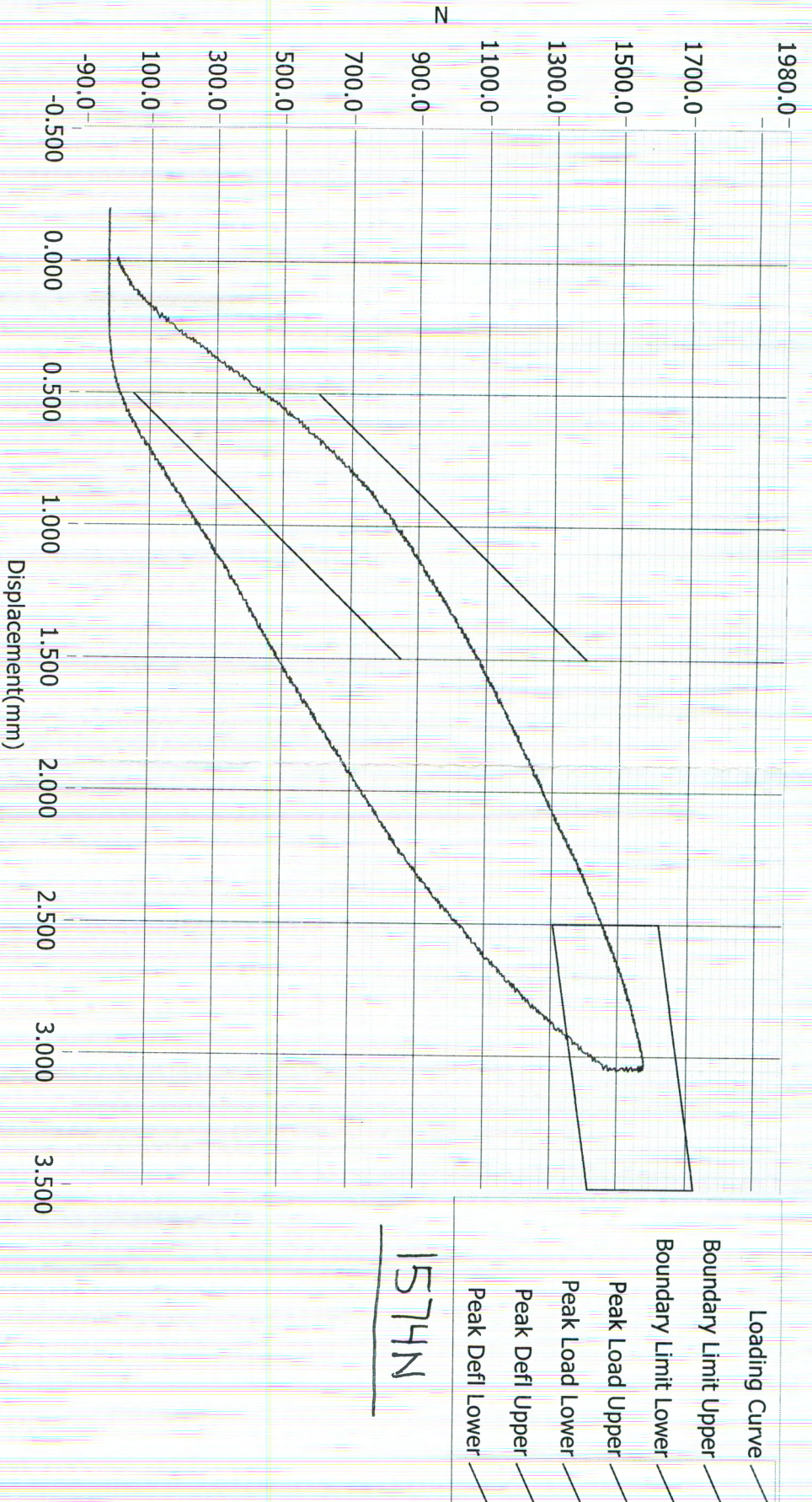


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.7	12.3	-4.7	35.4



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.5	17.4	-0.3	88.3

Resultant Data - SIDIIS Plug Compression



ATD Calibration Lab

M20150302 Pre Test

Test ID

Part Serial Number

Test Date

Test Time

70688

12/12/2013

9:25 PM

Cert ID

ATD Serial Number

ATD Type

N/A

SIDIIS

Current Date : 12/12/2013

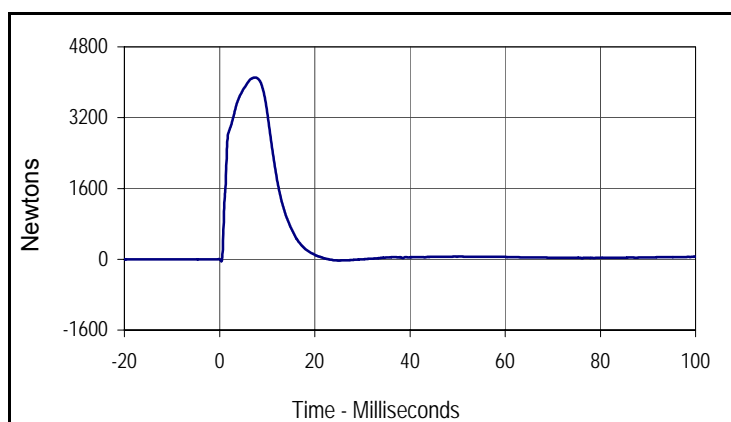
Current Time : 21:25:45

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 307

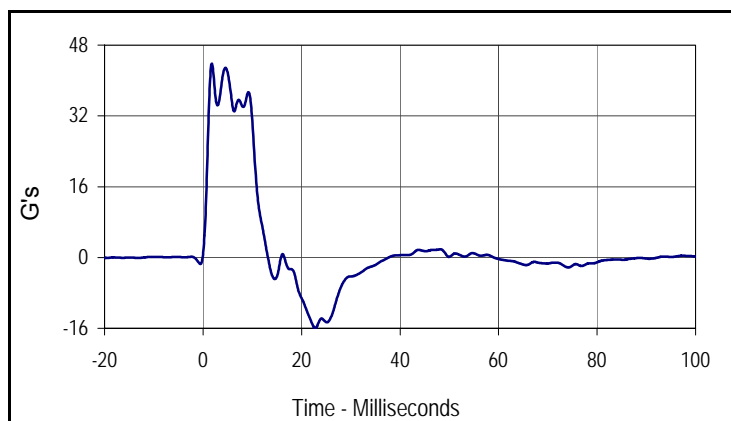
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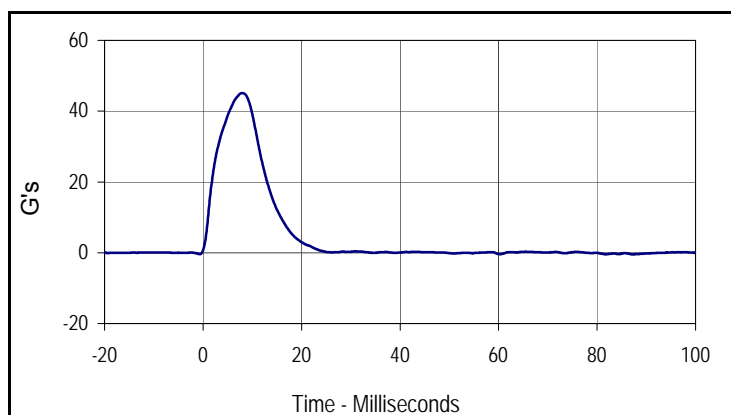
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	594	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.60	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4104.9	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.3	Pass
Peak Impactor Acceleration	G's	38 to 47	45.1	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4104.9	7.6	-42.5	0.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
43.8	1.8	-16.0	22.8



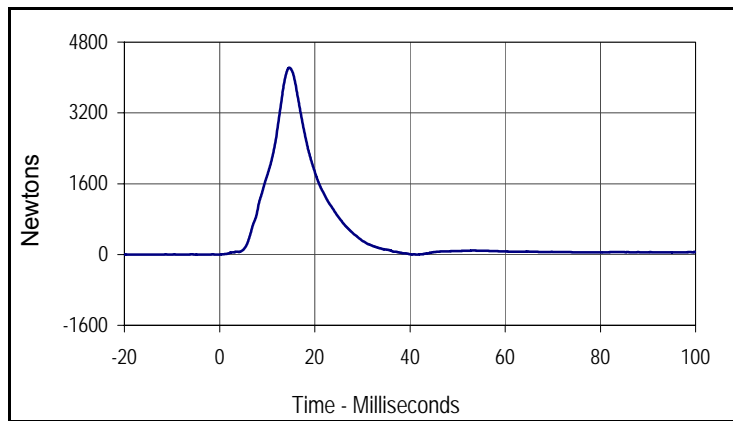
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.1	7.9	-0.4	87.2

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 307

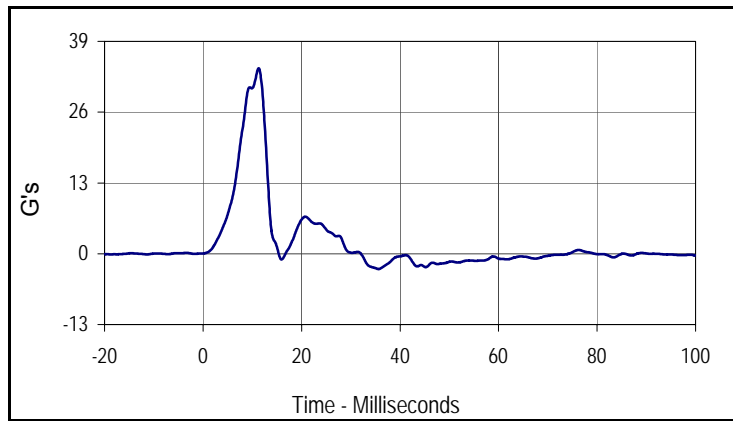
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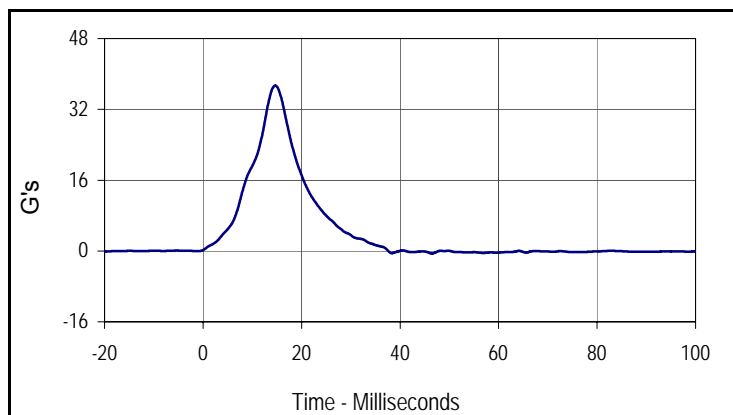
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	639	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	43.0	Pass
	Min		42.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	43.0	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.34	Pass
Peak Iliac Force	Newtons	4100 to 5100	4222.8	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	34.1	Pass
Peak Impactor Acceleration	G's	36 to 45	37.4	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4222.8	14.7	-2.4	-19.1



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
34.1	11.3	-2.8	35.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
37.4	14.7	-0.6	46.4

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

Test Program: ES2re External Measurements

Test Date: 11/20/14



ATD Serial No.: F037

Test I.D.: N/A

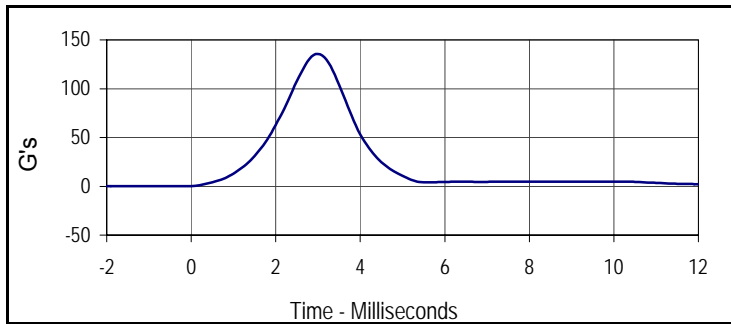
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
1 Sitting Height	mm	900 - 918	909	Pass
2 Seat to Shoulder Joint	mm	558 - 572	564	Pass
3 Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4 Seat to Hip Joint (Center of Bolt)	mm	97 - 103	99	Pass
5 Sole to Seat, Sitting	mm	333 - 451	395	Pass
6 Head Width	mm	152 - 158	156	Pass
7 Shoulder / Arm Width	mm	461 - 479	470	Pass
8 Thorax Width	mm	322 - 332	326	Pass
9 Abdomen Width	mm	273 - 287	280	Pass
10 Pelvis Lap Width	mm	359 - 373	363	Pass
11 Head Depth	mm	196 - 206	201	Pass
12 Thorax Depth	mm	262 - 272	270	Pass
13 Abdomen Width	mm	194 - 204	199	Pass
14 Pelvis Depth	mm	235 - 245	240	Pass
15 Back of Buttocks to Hip Joint (Center of Bolt)	mm	150 - 160	155	Pass
16 Back of Buttocks to Front Knee	mm	597 - 615	608	Pass
Overall Test Results				Pass

Test Program: ES2re Head Drop Test
 ATD Serial No.: F037

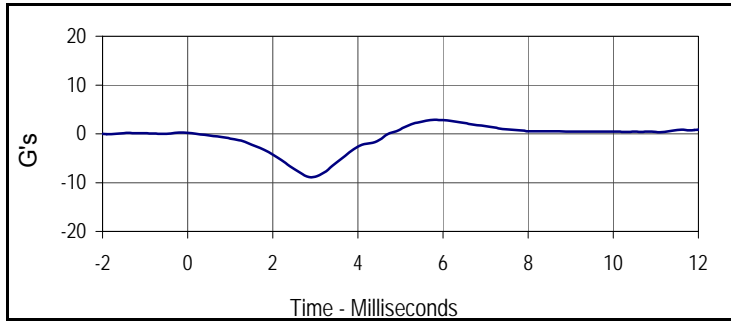
Test Date: 11/20/14
 Test I.D.: F037HD067



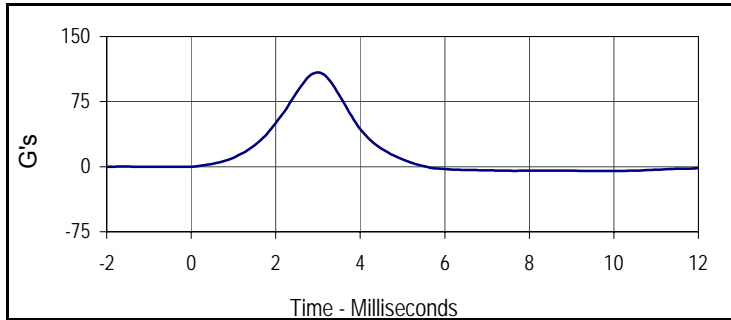
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	275	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.4	Pass
Peak Head Resultant Acceleration	G's	125 to 155	135.6	Pass
Peak Head X Acceleration	G's	≤15	8.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.8	Pass
Overall Test Results				Pass



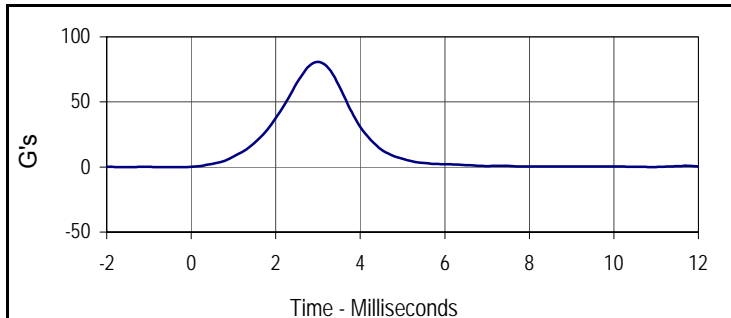
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
135.6	3.0	0.0	-0.5



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.9	5.8	-8.9	2.9



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
108.6	3.0	-4.8	10.2



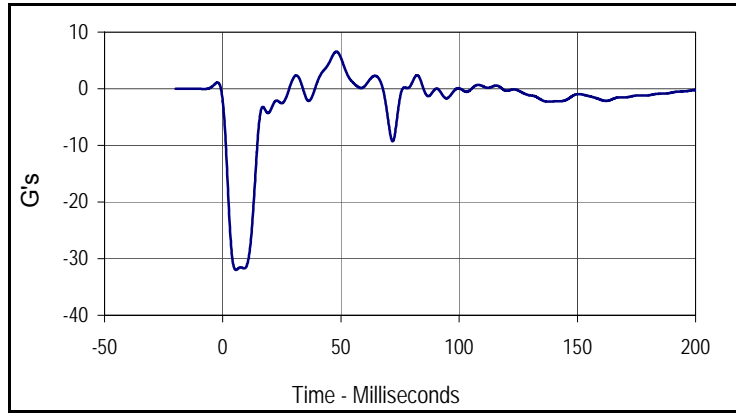
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
80.7	3.0	-0.2	-0.7

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

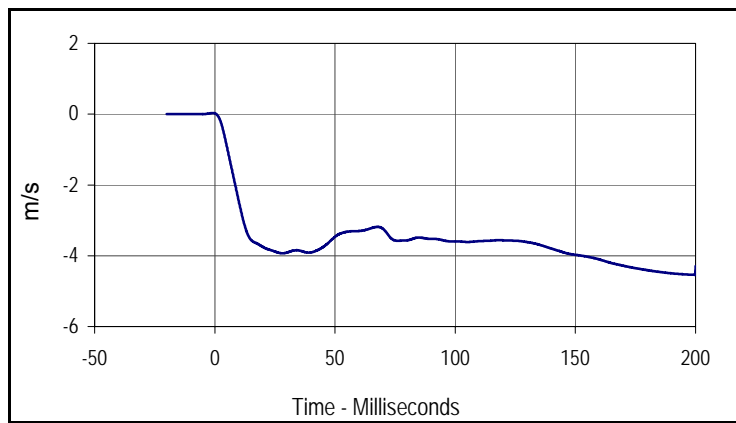
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 Test I.D.: F037NB067



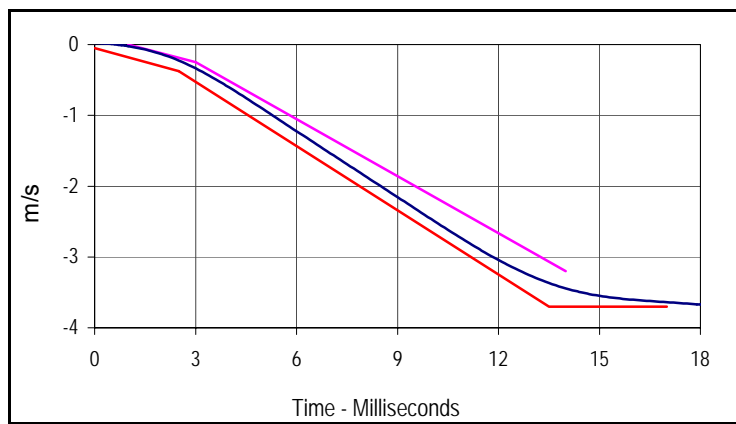
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	310	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass	
	Min		20.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	20.4	Pass	
Pendulum Velocity	m/s	3.3 to 3.5	3.41	Pass	
Headform Flexion	Max	Degrees	49 to 59	57.1	Pass
	Time	msec	54 to 66	57.0	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	61.8	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
6.5	48.1	-32.0	5.6



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.5	199.9

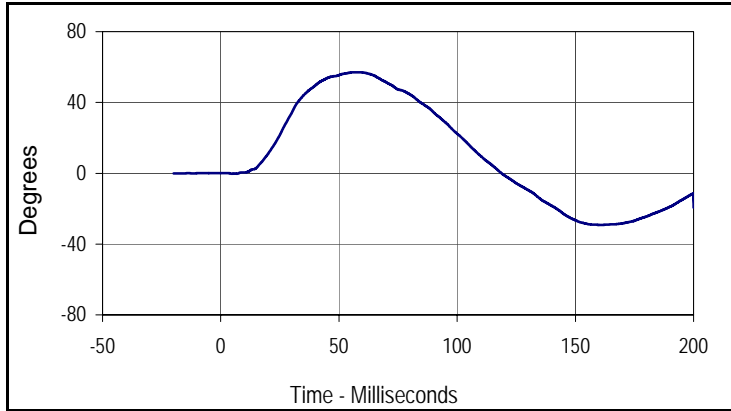


Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.5	199.9

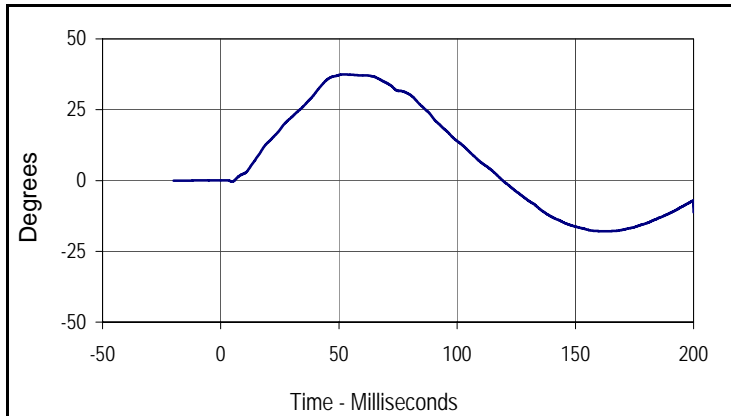
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

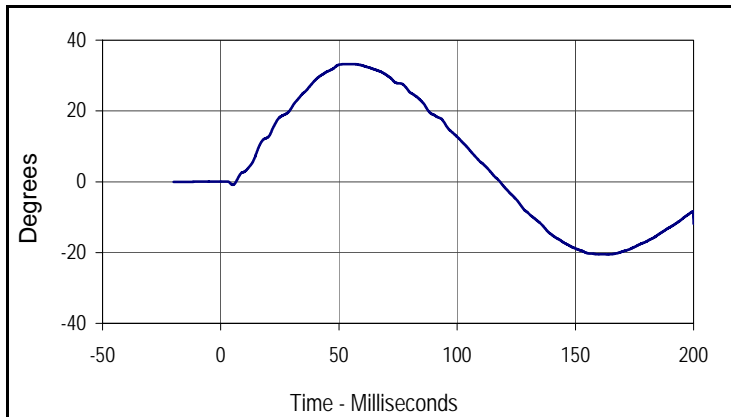
Test Date: 11/20/14
 Test I.D.: F037NB067



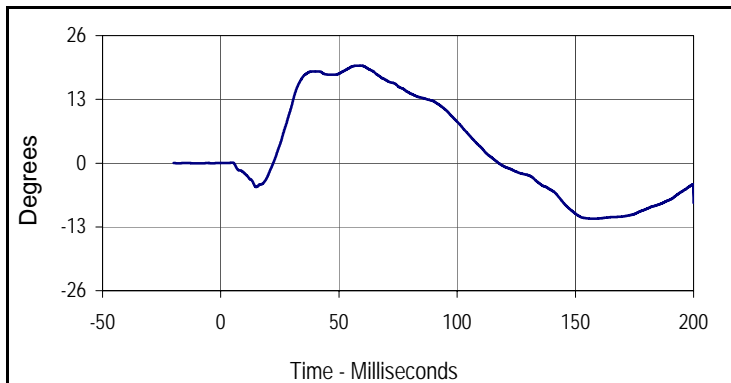
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
57.1	57.0	-29.2	160.4



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
37.5	51.9	-18.0	162.1



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
33.2	54.8	-20.5	163.6



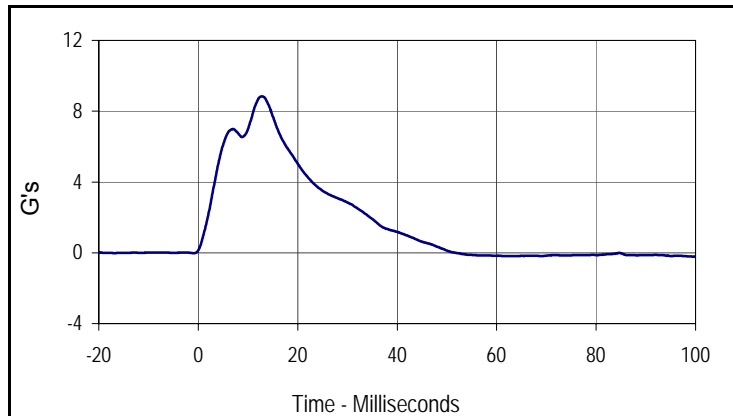
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
19.9	59.0	-11.3	158.5

Test Program: ES2re Shoulder Impact Test
 ATD Serial No.: F037

Test Date: 11/20/14
 Test I.D.: F037SH067



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	375	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.7	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.30	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	8.8	Pass
Overall Test Results				Pass



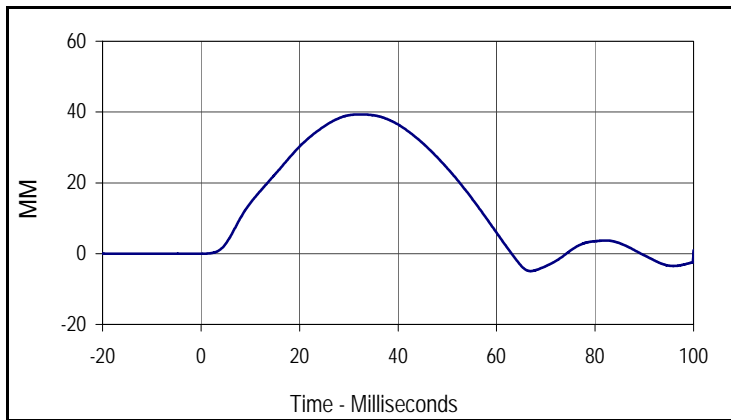
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
8.8	12.8	-0.2	99.6

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 1

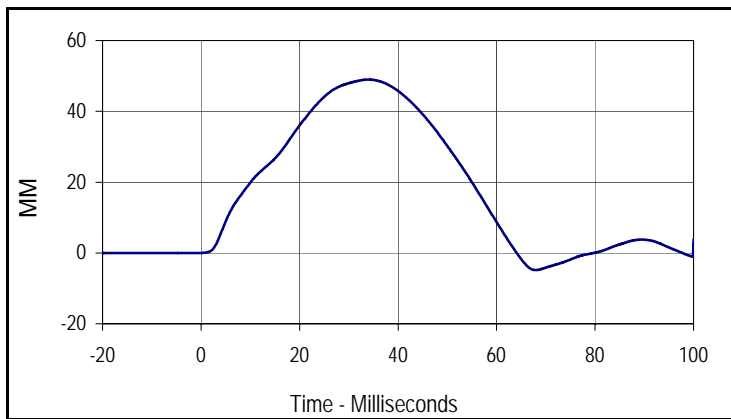
Test Date: 11/20/14
 Test I.D.: F037RB1067



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	430	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.8	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	39.3	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.0	Pass
Overall Test Results				Pass



Curve Description			
Upper Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
39.3	32.4	-5.0	66.9



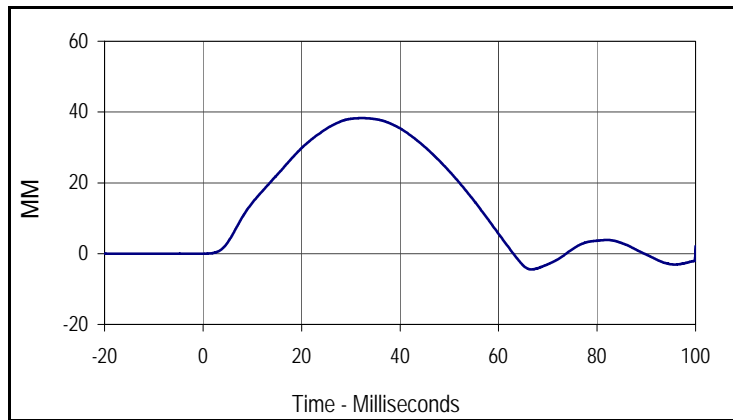
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.0	34.0	-4.8	68.0

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 2

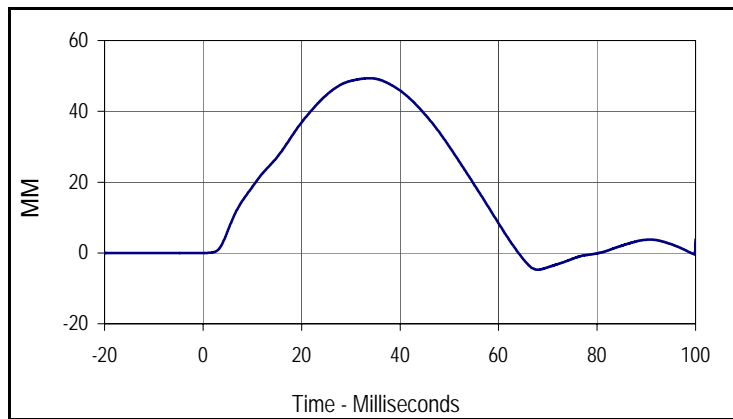
Test Date: 11/20/14
 Test I.D.: F037RB2067



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	475	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.8	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.3	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.3	Pass
Overall Test Results				Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.3	32.2	-4.5	66.7



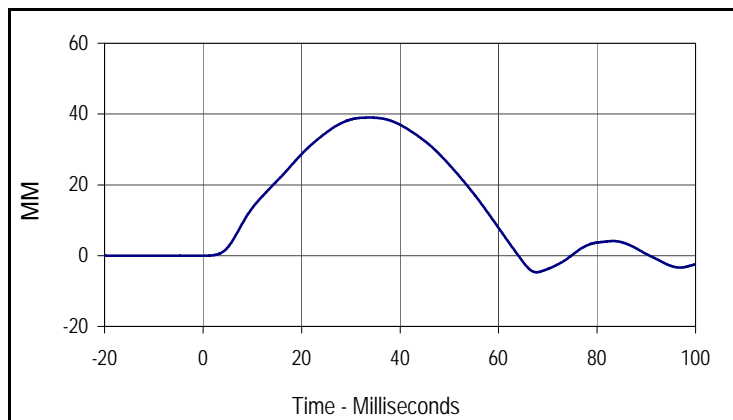
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.3	33.9	-4.7	68.0

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 3

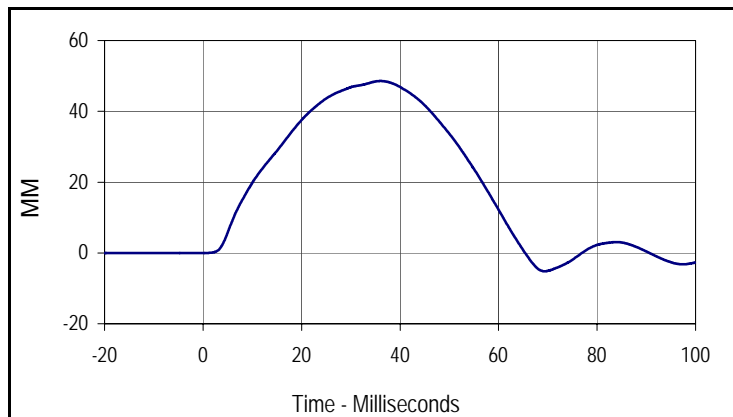
Test Date: 11/20/14
 Test I.D.: F037RB3067



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	520	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.9	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	39.0	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.6	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
39.0	34.0	-4.7	67.7



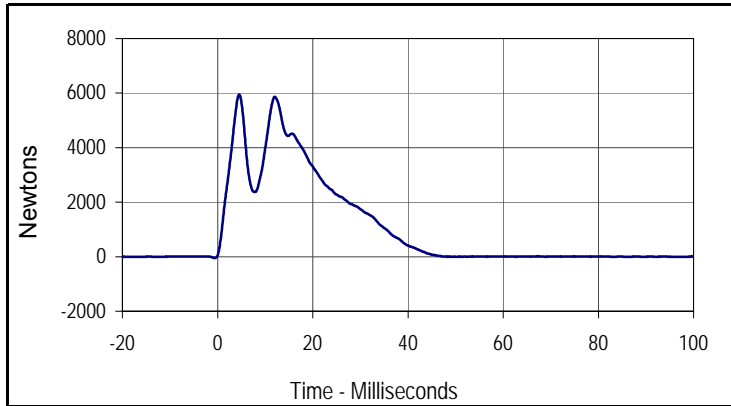
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.6	36.0	-5.2	69.3

Test Program: ES2re Thorax - Full Body Impact Test
 ATD Serial No.: F037

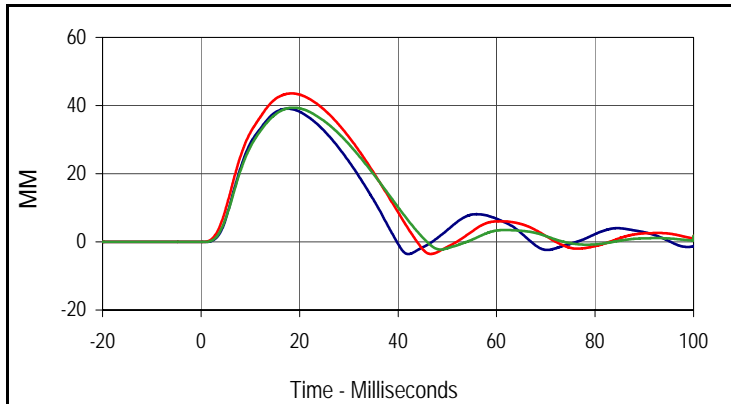
Test Date: 11/20/14
 Test I.D.: F037TH067



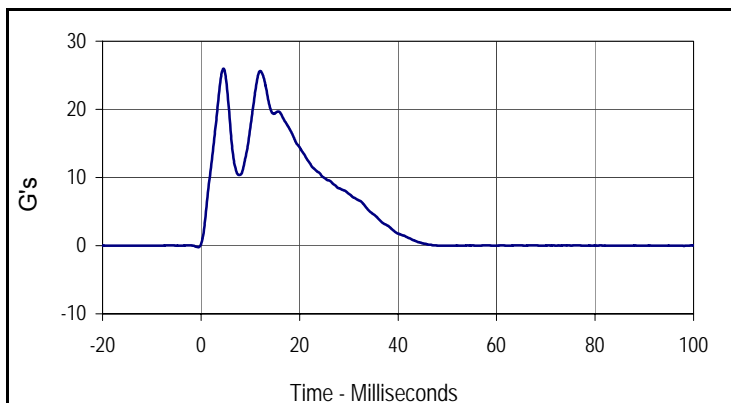
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	565	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.1	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.49	Pass
Peak Impactor Force	N	5100 to 6200	5868.8	Pass
	msec	> 6.0 msec	12	Pass
Peak Upper Rib Deflection	mm	34 to 41	39.1	Pass
Peak Middle Rib Deflection	mm	37 to 45	43.6	Pass
Peak Lower Rib Deflection	mm	37 to 44	39.4	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
5947.7	4.6	-50.0	-0.6



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
39.1	17.5	-3.6	42.1
Max (Middle)	Time	Min (Middle)	Time
43.6	18.4	-3.6	46.6
Max (Lower)	Time	Min (Lower)	Time
39.4	18.8	-2.3	48.7



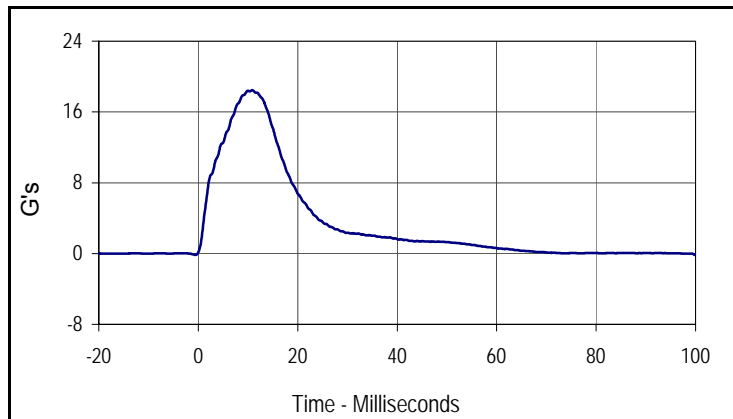
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
26.0	4.6	-0.2	-0.6

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

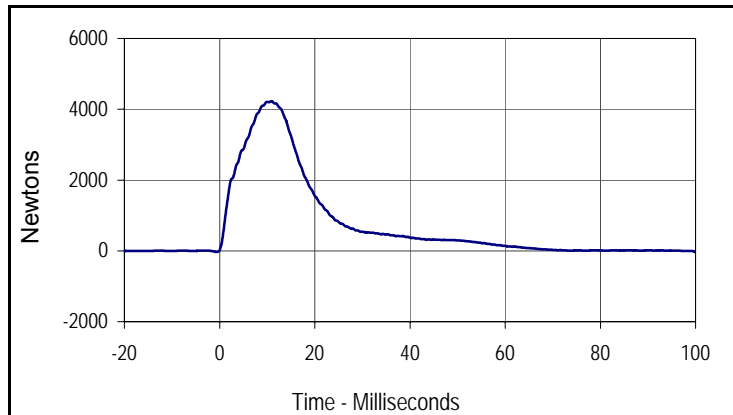
Test Date: 11/20/14
 Test I.D.: F037ABD067



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	635	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.1	Pass
Probe Velocity	m/s	3.9 to 4.1	4.00	Pass
Peak Impactor Force	N	4000 to 4800	4231.0	Pass
	msec	10.6 to 13.0	10.9	Pass
Sum of Abdominal Forces	N	2200 to 2700	2437.5	Pass
	msec	10.0 to 12.3	11.1	Pass
Overall Test Results				Pass



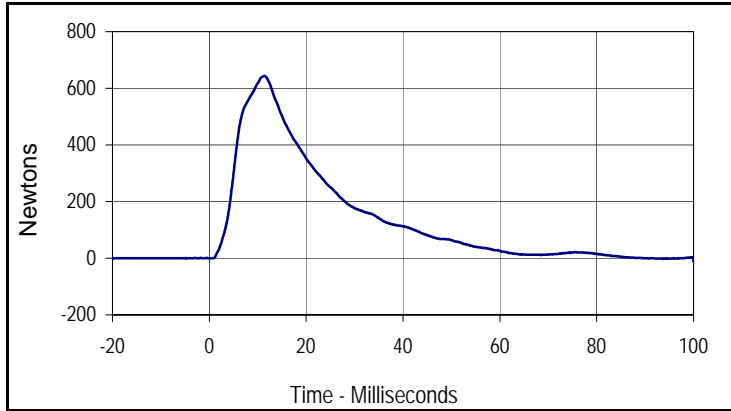
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
18.5	10.9	-0.1	-0.6



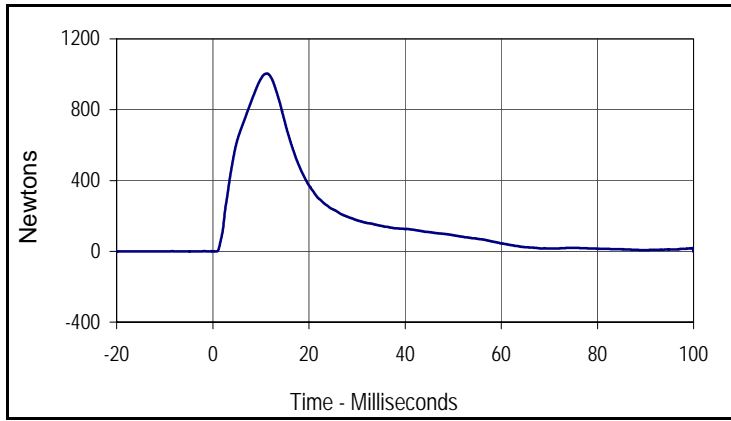
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4231.0	10.9	-32.9	-0.6

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

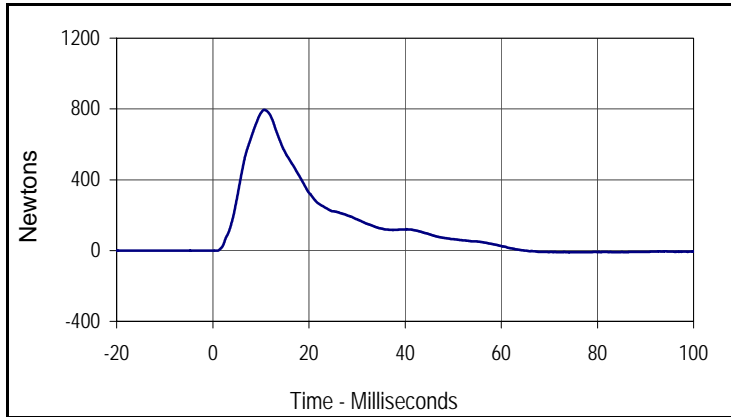
Test Date: 11/20/14
 Test I.D.: F037ABD067



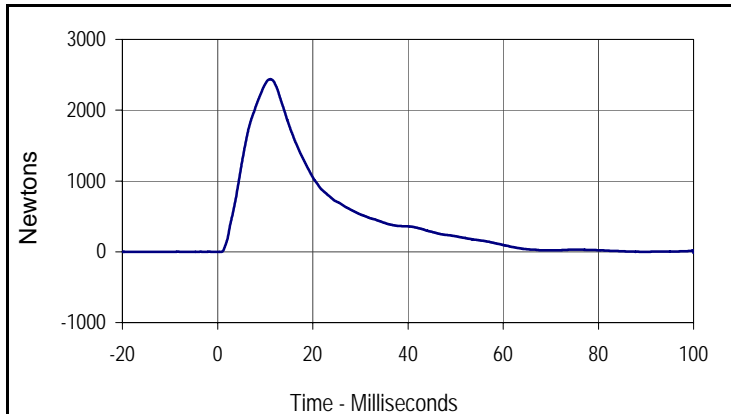
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
643.9	11.4	-10.8	100.0



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
1004.2	11.2	-2.0	100.0



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
794.7	10.7	-10.0	75.3



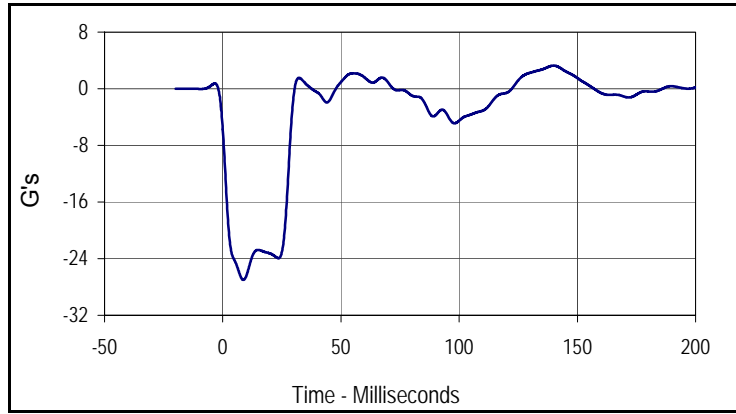
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtons
Max	Time	Min	Time
2437.5	11.1	-16.5	100.0

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

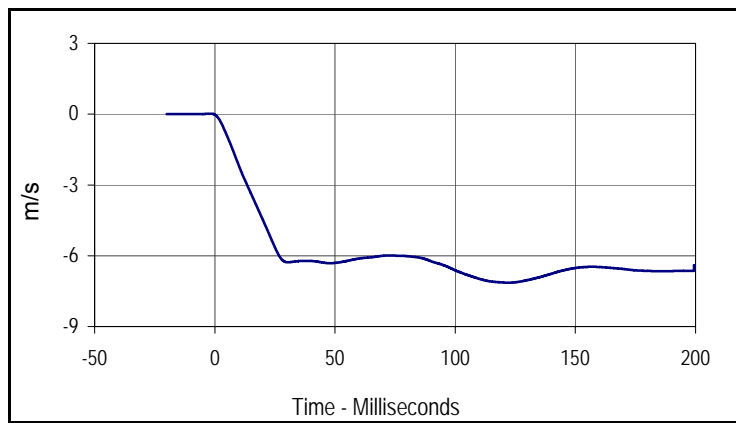
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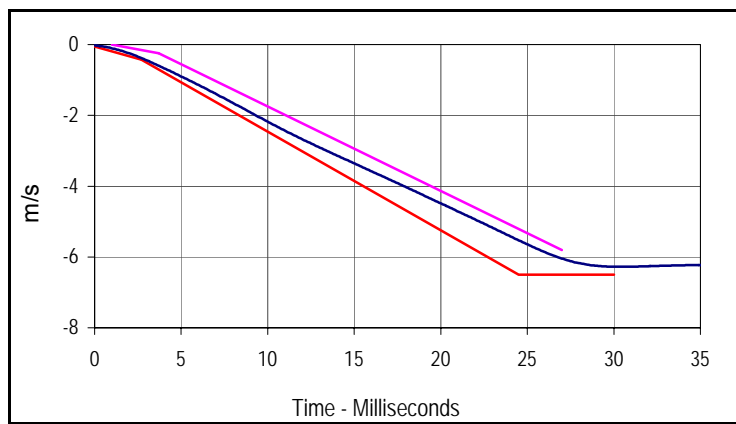
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	710	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.0	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.07	Pass
Headform Rotation	Max	45 to 55	49.6	Pass
	Time	39 to 53	44.6	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	41.7	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
3.3	140.5	-27.0	9.3



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.3	-7.1	122.9

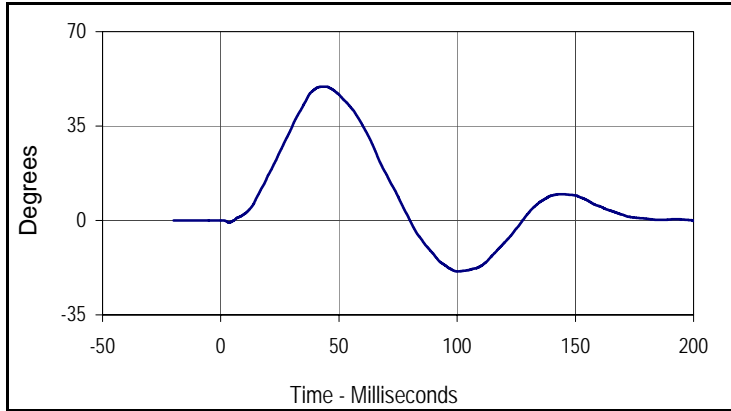


Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.3	-7.1	122.9

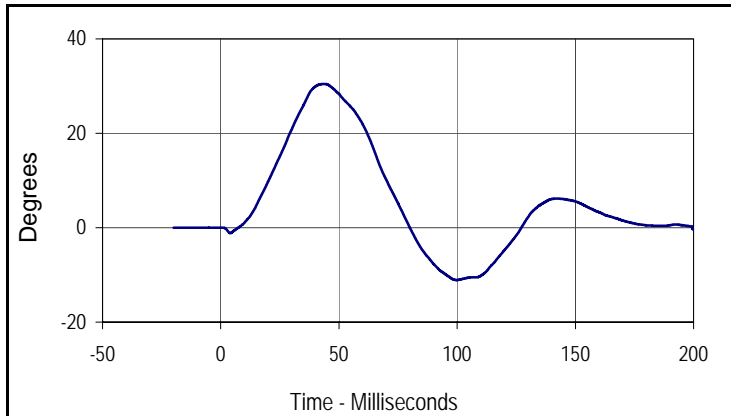
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

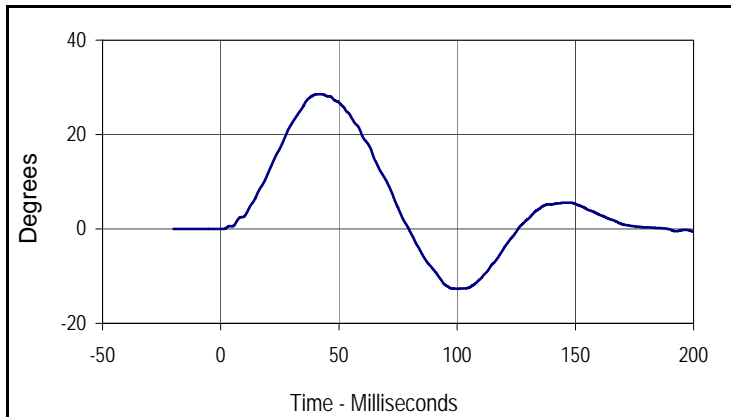
Test Date: 11/20/14
 Test I.D.: F037LB067



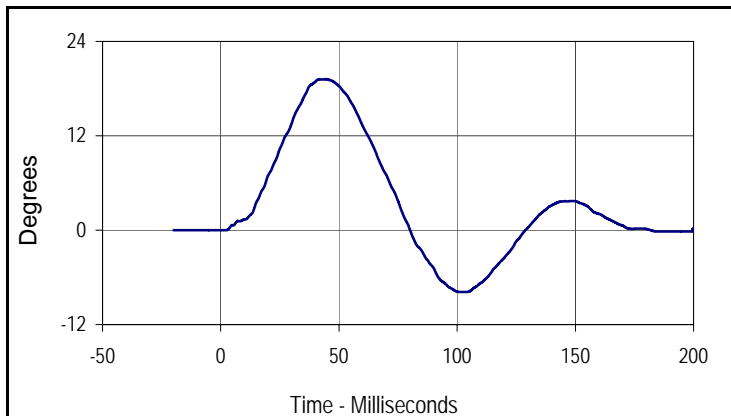
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
49.6	44.6	-18.9	100.8



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
30.4	44.4	-11.1	100.4



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
28.6	42.9	-12.7	100.6



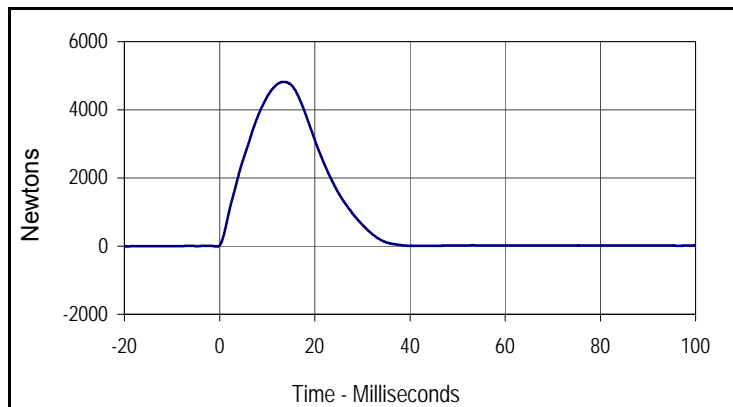
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
19.2	45.0	-7.9	104.2

Test Program: ES2re Pelvis Impact Test
 ATD Serial No.: F037

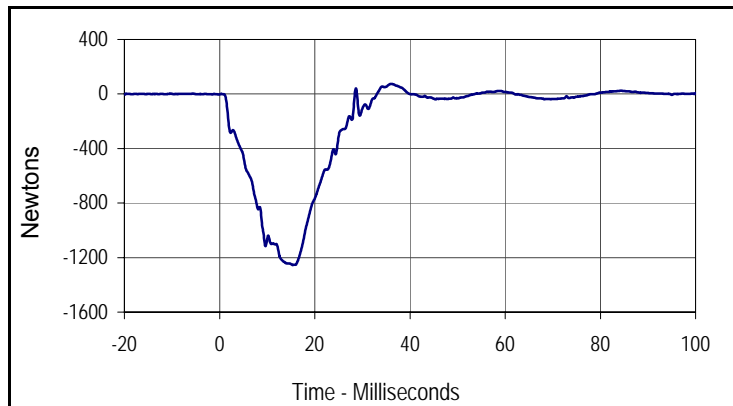
Test Date: 11/20/14
 Test I.D.: F037PL067



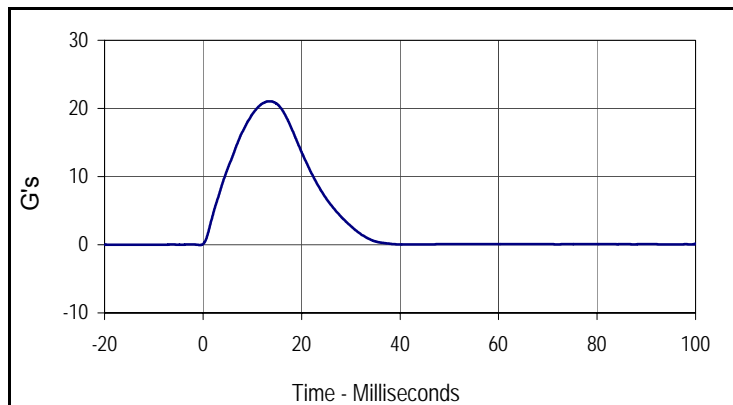
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	765	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	21.3	Pass
	Min		20.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.3	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Impactor Force	N	4700 to 5400	4820.2	Pass
	msec	11.8 to 16.1	13.5	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1254.1	Pass
	msec	12.2 to 17.0	15.4	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4820.2	13.5	-10.2	-0.6



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
74.7	36.1	-1254.1	15.4



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
21.0	13.5	0.0	-0.6

Test Program: SID IIs External Measurements

Test Date: 11/21/14



ATD Serial No.: 307

Test I.D.: N/A

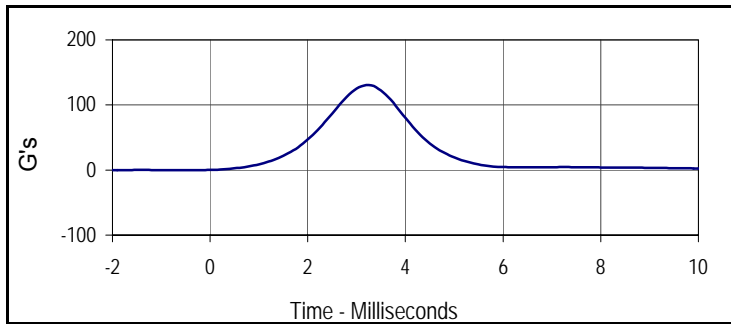
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
A Sitting Height	mm	772 - 788	778	Pass
B Shoulder Pivot Height	mm	437 - 453	443	Pass
C H-Point Height	mm	79 - 89	85	Pass
D H-Point from Seatback	mm	141 - 151	144	Pass
E Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F Thigh Clearance	mm	119 - 135	128	Pass
G Head Breadth	mm	140 - 148	145	Pass
H Head Back from Backline	mm	40 - 46	43	Pass
I Head Depth	mm	178 - 188	185	Pass
J Head Circumference	mm	541 - 551	546	Pass
K Buttock to Knee Length	mm	514 - 540	525	Pass
L Popliteal Height	mm	343 - 369	351	Pass
M Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N Buttock Popliteal Length	mm	416 - 442	432	Pass
O Chest Depth w/o Jacket	mm	195 - 211	205	Pass
P Foot Length	mm	216 - 232	223	Pass
Q Hip Breadth with Pelvic Plug	mm	313 - 323	319	Pass
R Arm Length	mm	249 - 259	254	Pass
S Knee Joint to Seatback	mm	477 - 493	483	Pass
V Shoulder Width	mm	341 - 357	351	Pass
W Foot Width	mm	78 - 94	89	Pass
Y Chest Circumference with Jacket	mm	851 - 881	872	Pass
Z Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results				Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 307

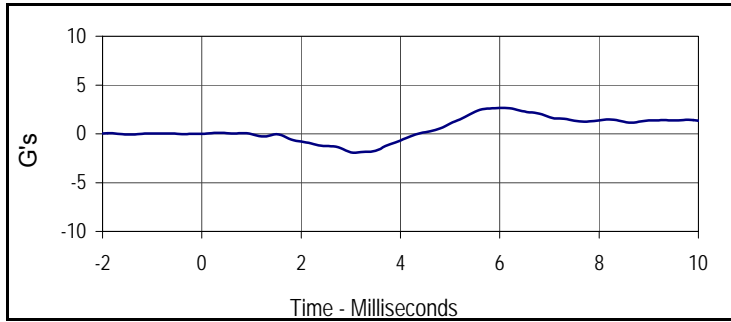
Test Date: 11/21/14
 Test I.D.: 307HD076



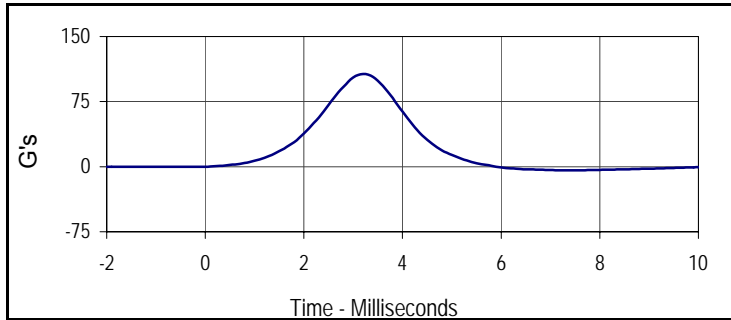
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	305	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.4	Pass
Peak Head Resultant Acceleration	G's	115 to 137	130.5	Pass
Peak Head X Acceleration	G's	<15	2.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.5	Pass
Overall Test Results				Pass



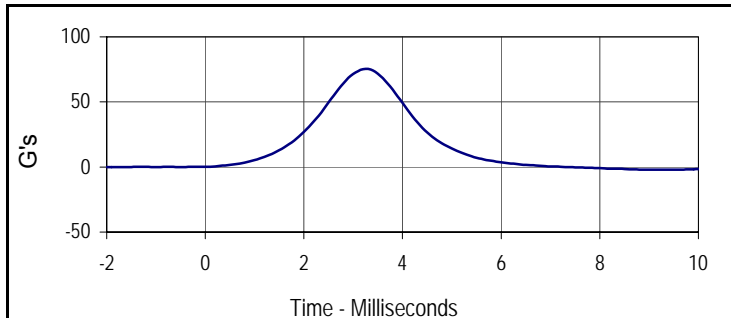
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
130.5	3.2	0.0	-0.5



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.7	6.0	-1.9	3.1



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
106.7	3.2	-4.3	7.3



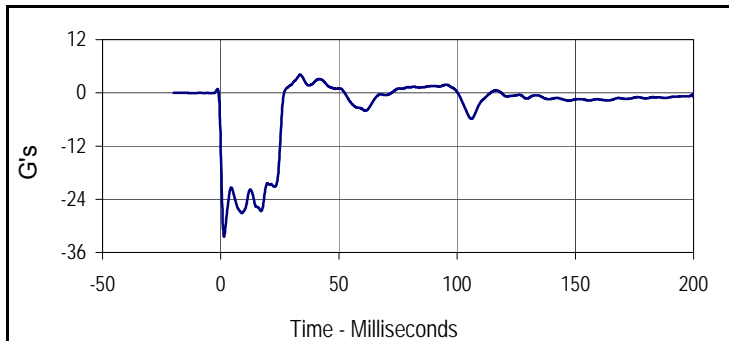
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
75.3	3.3	-2.1	9.5

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

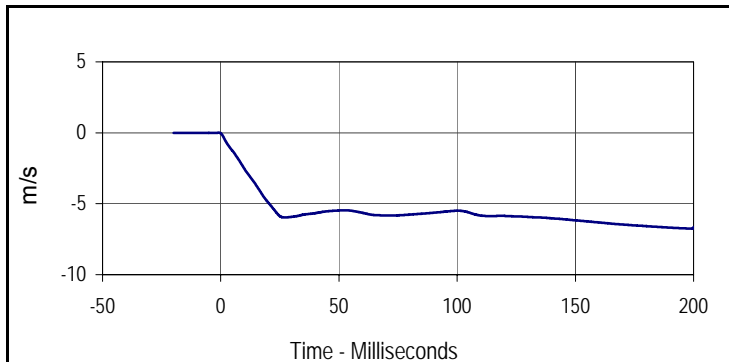
Test Date: 11/21/14
 Test I.D.: 307NB076



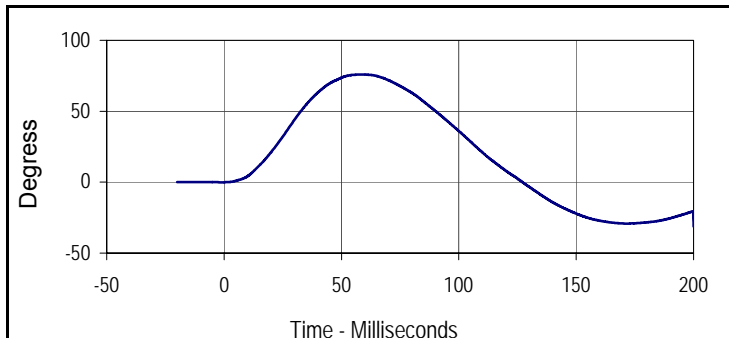
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	440	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass	
	Min		20.3	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	20.3	Pass	
Pendulum Velocity	m/s	5.51 to 5.63	5.56	Pass	
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.53	Pass
	15 msec	m/s	-3.30 to -4.10	-3.70	Pass
	20 msec	m/s	-4.40 to -5.40	-4.90	Pass
	25 msec	m/s	-5.40 to -6.10	-5.88	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.97	Pass
D-Plane Rotation	Max	Degrees	71 to 81	75.9	Pass
	Time	msec	50 to 70	58.7	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-41.2	Pass	
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	105.5	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
4.1	0.0	-32.4	0.0



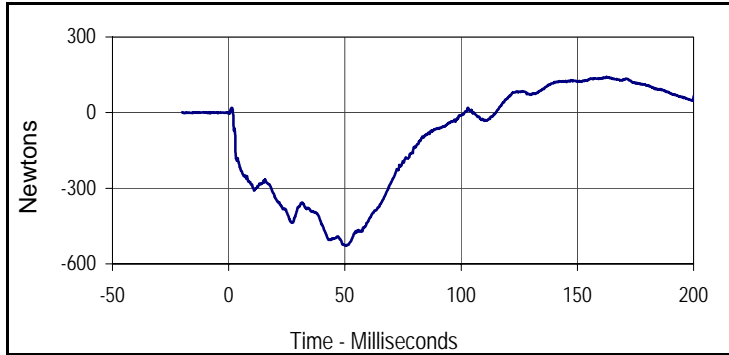
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.9	-6.8	199.9



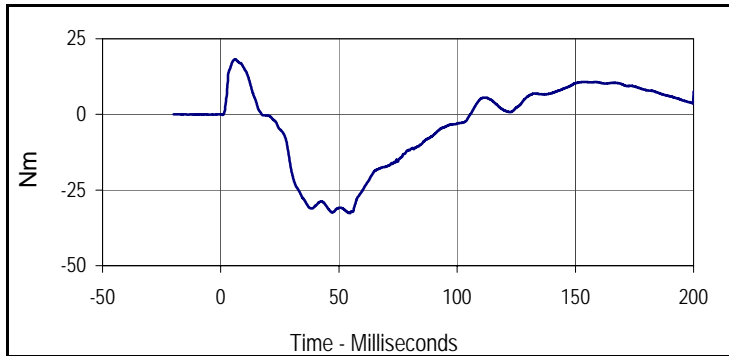
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
75.9	58.7	-31.2	200.0

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

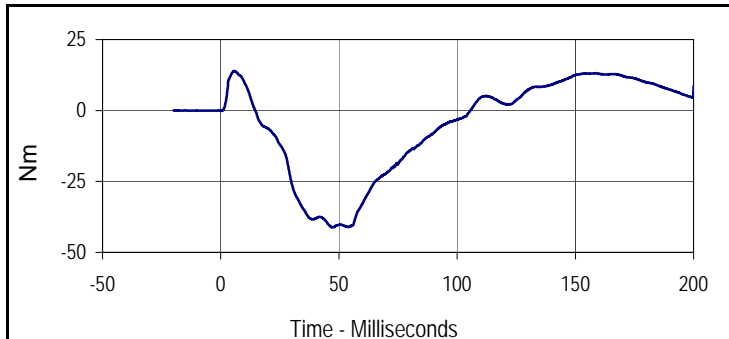
Test Date: 11/21/14
 Test I.D.: 307NB076



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
142.4	162.6	-527.2	50.4



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
18.2	6.3	-32.6	54.7



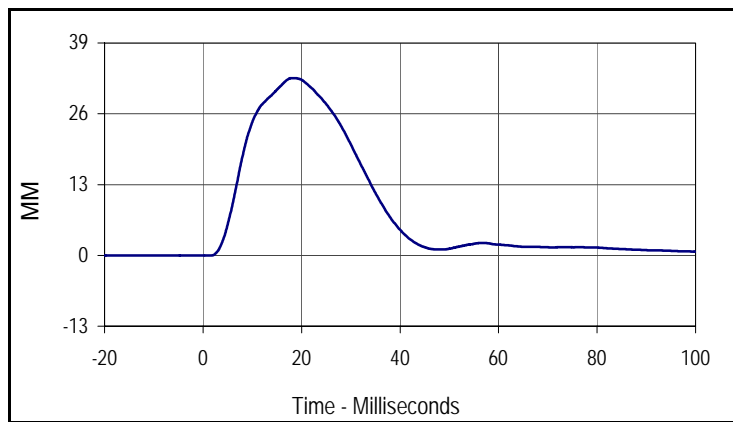
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
13.9	5.7	-41.2	47.2

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 307

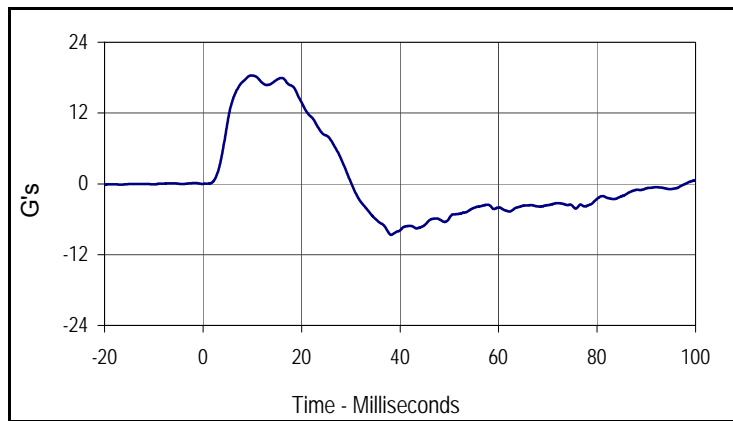
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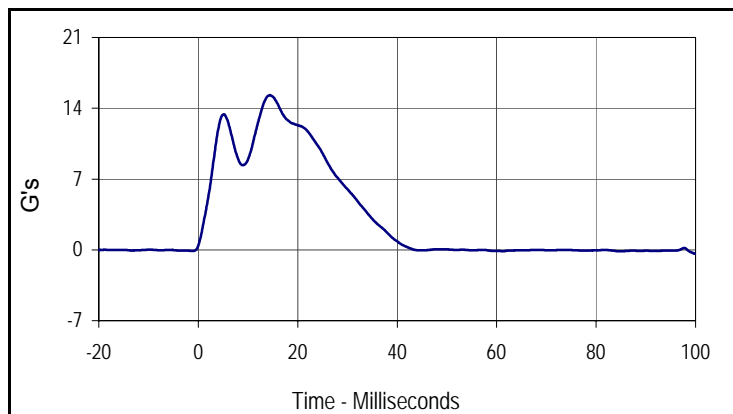
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	495	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.4	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.33	Pass
Peak Shoulder Deflection	mm	28 to 37	32.5	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.4	Pass
Peak Impactor Acceleration	G's	13 to 18	15.3	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
32.5	18.7	0.0	-9.5



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.4	9.8	-8.7	38.2



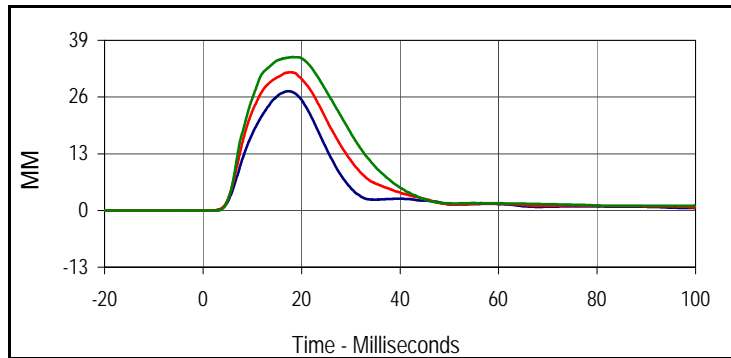
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.3	14.4	-0.3	99.8

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

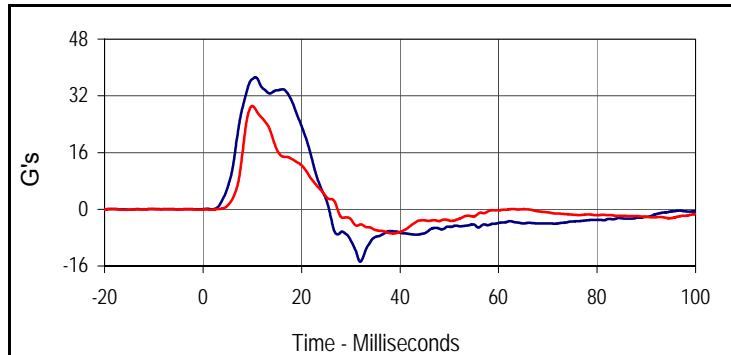
Test Date: 11/21/14
 Test I.D.: 307TWA076



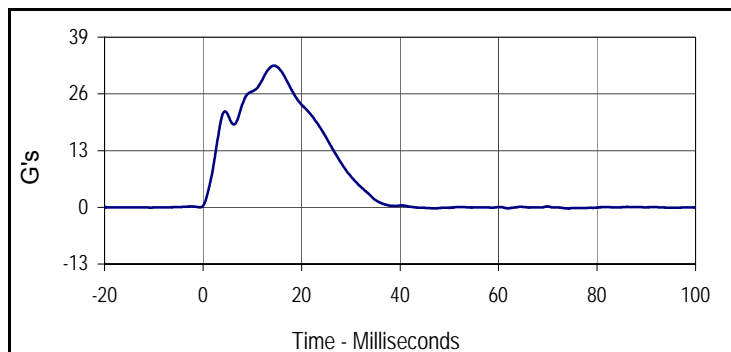
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	540	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.63	Pass
Peak Shoulder Deflection	mm	31 to 40	33.6	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.3	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.7	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	35.2	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.3	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	29.1	Pass
Peak Impactor Acceleration	G's	30 to 36	32.5	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.3	17.3	0.0	-10.8
Middle Thorax Deflection			
Max	Time	Min	Time
31.7	17.8	0.0	-12.5
Lower Thorax Deflection			
Max	Time	Min	Time
35.2	18.2	0.0	-11.0



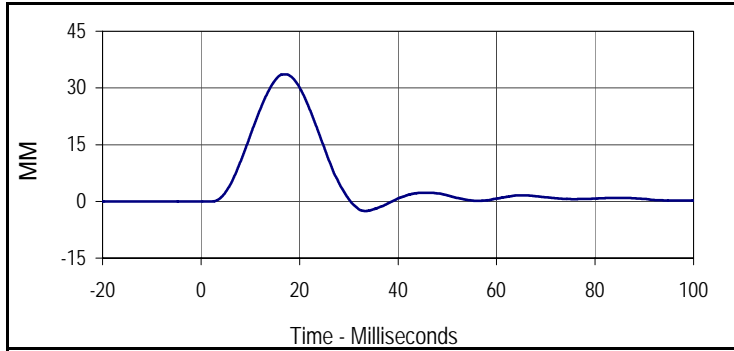
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.3	10.6	-14.8	31.9
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
29.1	10.0	-6.8	38.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
32.5	14.4	-0.3	47.0

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

Test Date: 11/21/14
 Test I.D.: 307TWA076



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
33.6	17.3	-2.6	33.4

Test Program: SID IIs Thorax without Arm Impact Test

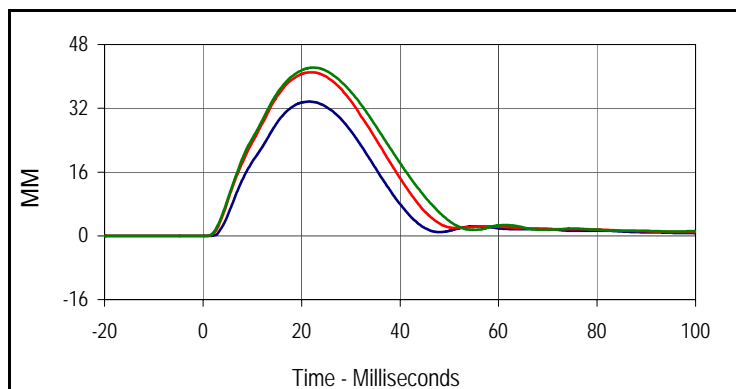
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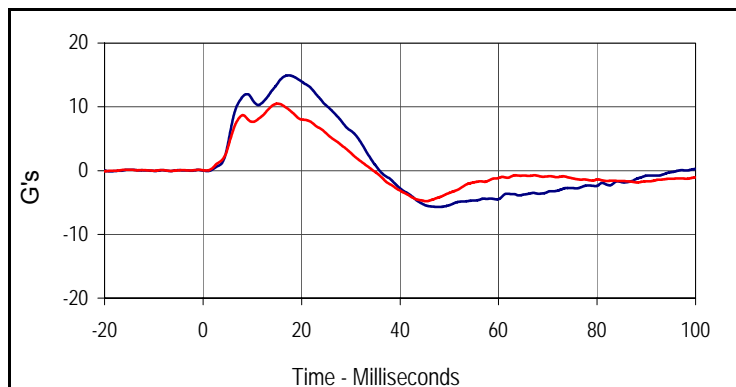
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Test I.D.: 307TWOA076

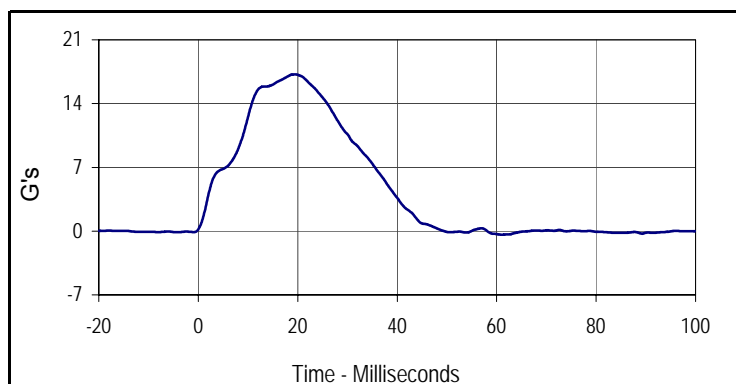
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	590	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.5	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.30	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	33.7	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	41.0	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	42.2	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.0	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	10.5	Pass
Peak Impactor Acceleration	G's	14 to 18	17.2	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
33.7	21.6	0.0	-4.3
Middle Thorax Deflection			
Max	Time	Min	Time
41.0	22.0	0.0	-6.9
Lower Thorax Deflection			
Max	Time	Min	Time
42.2	22.4	0.0	-7.9



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.0	17.4	-5.7	47.8
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.5	15.2	-4.8	45.3



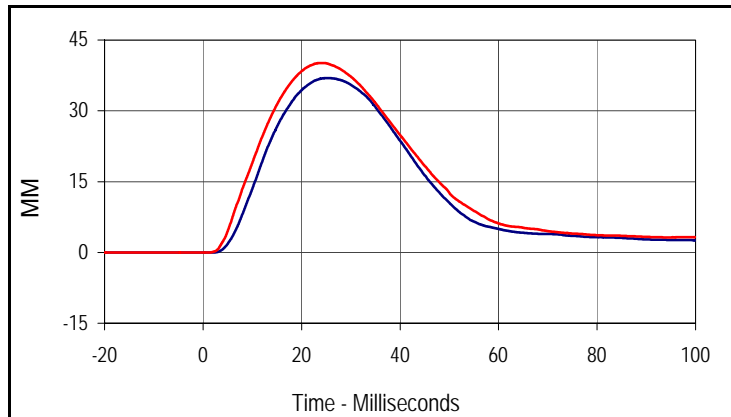
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
17.2	19.4	-0.4	61.1

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 307

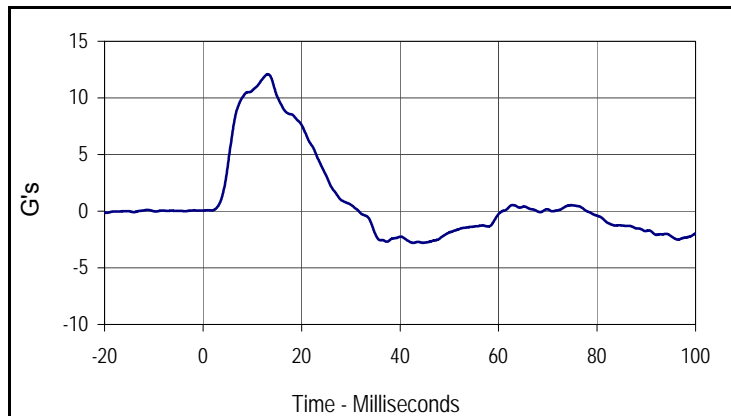
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 Test I.D.: 307ABD076



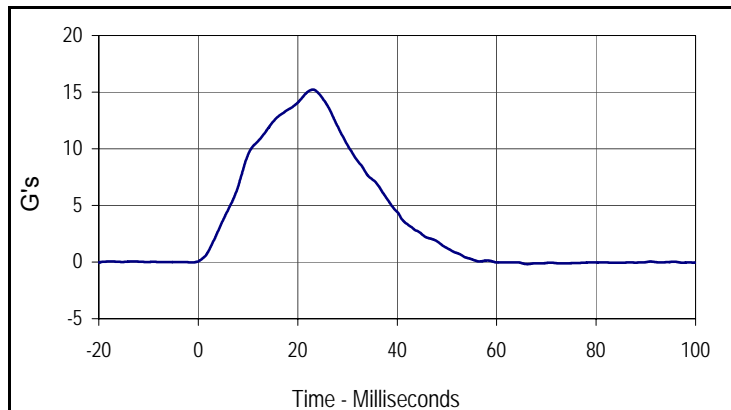
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	625	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.5	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	36.9	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	40.1	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.1	Pass
Peak Impactor Acceleration	G's	12 to 16	15.2	Pass
Overall Test Results				Pass



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.9	25.2	0.0	-11.6
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
40.1	24.0	0.0	-5.2

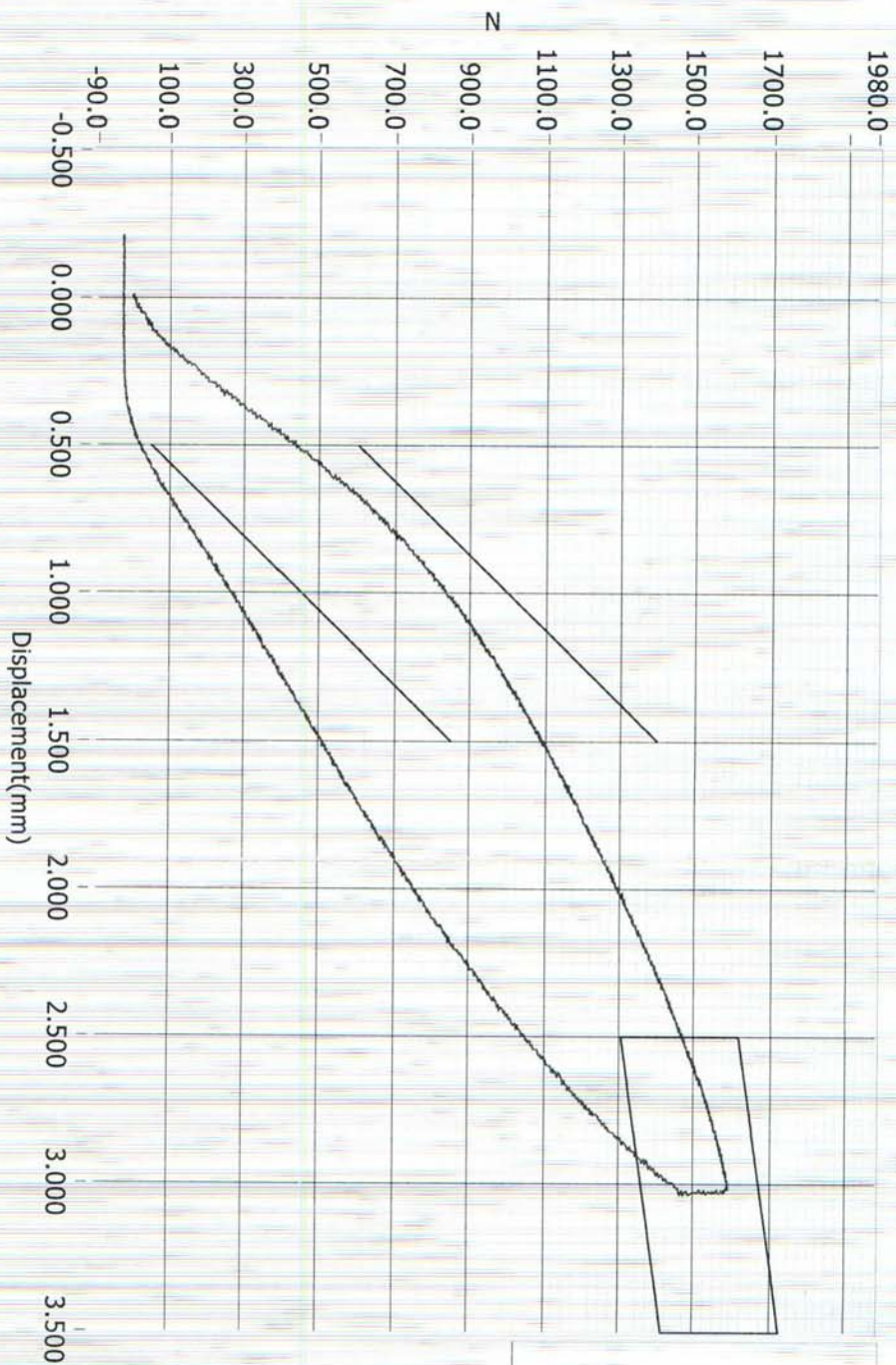


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.1	13.2	-2.8	42.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	23.0	-0.2	66.2

Resultant Data - SIDIIs Plug Compression



- Loading Curve
- Boundary Limit Upper
- Boundary Limit Lower
- Peak Load Upper
- Peak Load Lower
- Peak Defl Upper
- Peak Defl Lower

1589 N

ATD Calibration Lab

M20150302 Post Test

Test ID	Part Serial Number	Test Date	Test Time
<u>Cert ID</u>	70656	12/12/2013	8:58 PM
	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

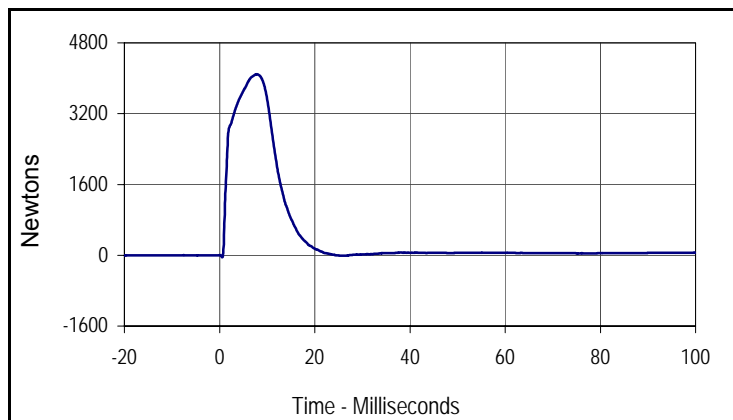
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Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 307

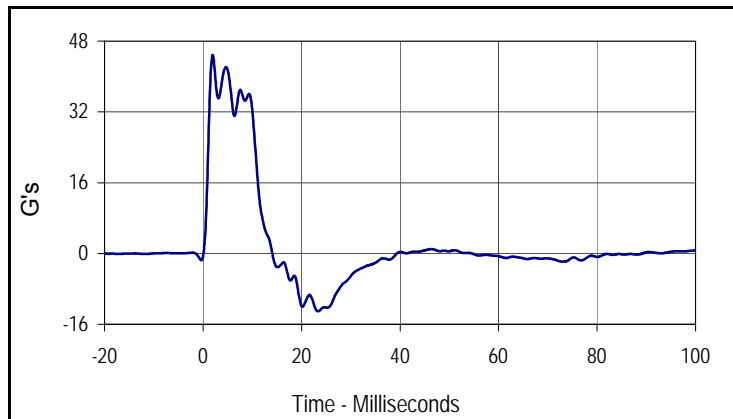
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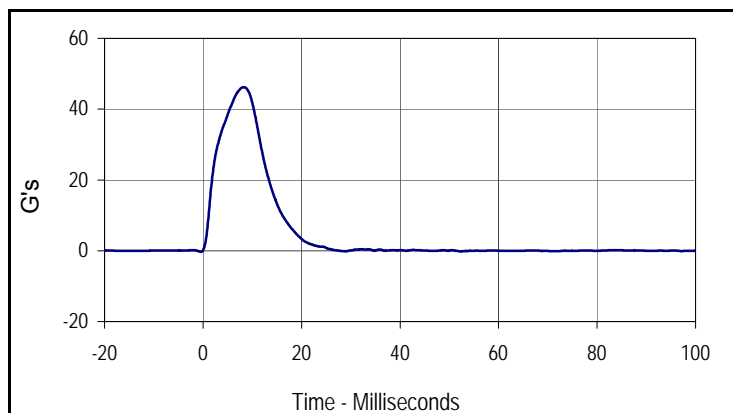
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	670	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.66	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4089.2	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.0	Pass
Peak Impactor Acceleration	G's	38 to 47	46.2	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4089.2	7.8	-44.7	0.6



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
44.8	1.9	-13.1	23.3



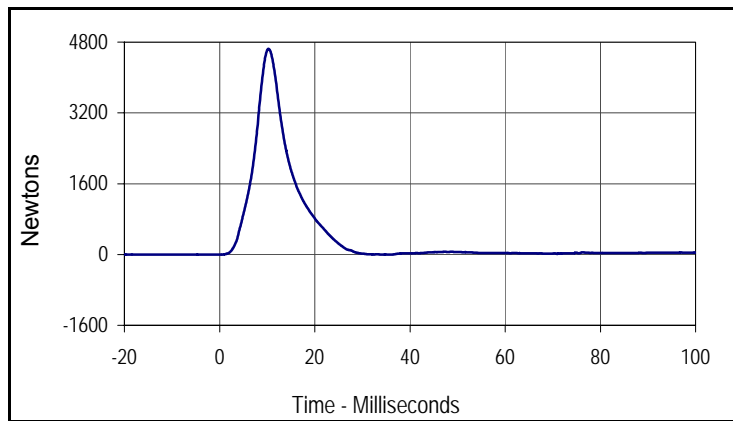
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.2	8.2	-0.3	-0.4

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 307

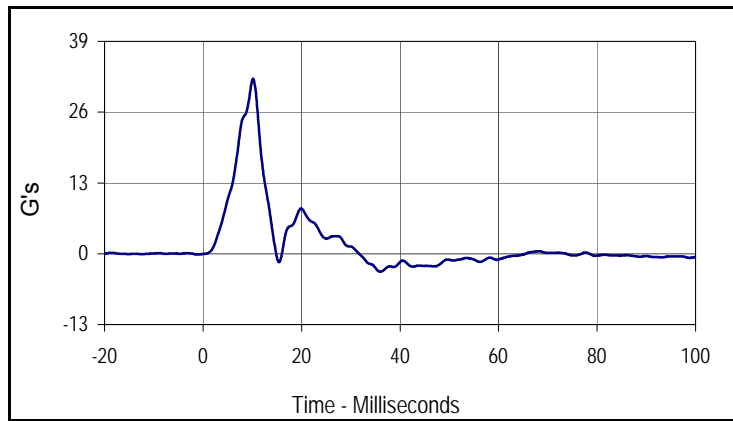
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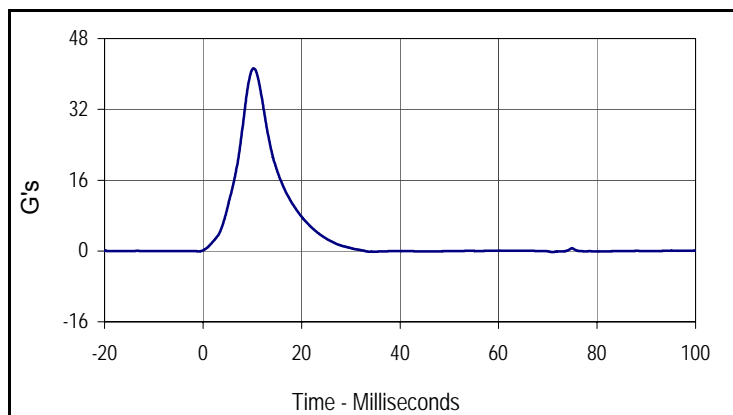
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	740	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	20.6	Pass
	Min		20.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.6	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Iliac Force	Newtons	4100 to 5100	4647.7	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	32.1	Pass
Peak Impactor Acceleration	G's	36 to 45	41.3	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4647.7	10.3	-3.0	35.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
32.1	10.2	-3.3	36.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
41.3	10.3	-0.3	71.0

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N F037		
			Serial Number	Manufacturer	Calibration
Head Accelerometers	Primary	X	P58858	Endevco	10/11/14
		Y	P58865	Endevco	10/11/14
		Z	P58867	Endevco	10/11/14
	Redundant	X	P58859	Endevco	10/11/14
		Y	P58866	Endevco	10/11/14
		Z	P58873	Endevco	10/11/14
Thorax Rib Displacement Potentiometers	Upper	Y	209	FTSS	10/12/14
	Middle	Y	210	FTSS	10/12/14
	Lower	Y	207	FTSS	10/12/14
Abdomen Load Cells	Forward	Y	1504	Denton	5/1/14
	Middle	Y	1505	Denton	5/1/14
	Rear	Y	1506	Denton	5/1/14
Lower Spine Accelerometers (T12)		X	P16336	Endevco	10/11/14
		Y	P52027	Endevco	10/11/14
		Z	P58877	Endevco	10/11/14
Pubic Symphysis Load Cell		Y	DG6784	Denton	5/15/14

TABLE 2 – Dummy Instrumentation (SID-IIs)

			SID-IIs S/N 307			
			Serial Number	Manufacturer	Calibration	
Head Accelerometers	Primary	X	P58900	Endevco	9/29/14	
		Y	P58902	Endevco	9/29/14	
		Z	P58983	Endevco	9/29/14	
	Redundant	X	P58901	Endevco	9/29/14	
		Y	P58906	Endevco	9/29/14	
		Z	P58989	Endevco	9/29/14	
Displacement Potentiometers	Thoracic Rib	Upper	Y	1249	FTSS	9/30/14
		Middle	Y	1265	FTSS	9/30/14
		Lower	Y	1277	FTSS	9/30/14
	Abdominal Rib	Upper	Y	1286	FTSS	9/30/14
		Lower	Y	1290	FTSS	9/30/14
Lower Spine Accelerometers (T12)		X	P59007	Endevco	9/30/14	
		Y	P59015	Endevco	9/30/14	
		Z	P58995	Endevco	9/30/14	
Acetabulum Load Cell		Y	260	Denton	5/8/14	
Iliac Wing Load Cell		Y	272	Denton	4/4/14	
Pelvis Plug (Struck Side)			72604	FTSS	2/1/14	
Pelvis Plug (Non-Struck Side)			72941	FTSS	2/8/14	

TABLE 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	A145521	MSI	8/14/14
	Vehicle Center of Gravity	Y	A145527	MSI	8/13/14
	Vehicle Center of Gravity	Z	A145477	MSI	8/13/14
2	Right Sill at Front Seat	X	A145524	MSI	8/14/14
	Right Sill at Front Seat	Y	A145486	MSI	8/14/14
	Right Sill at Front Seat	Z	A145457	MSI	8/16/14
3	Right Sill at Rear Seat	X	A145508	MSI	8/13/14
	Right Sill at Rear Seat	Y	A145530	MSI	8/13/14
	Right Sill at Rear Seat	Z	A136711	MSI	8/20/14
4	Left Sill at Front Door	Y	A136718	MSI	9/20/14
5	Left Sill at Rear Door	Y	A140418	MSI	11/7/14
6	Left A-Post Lower	Y	A145937	MSI	8/16/14
7	Left A-Post Middle	Y	A145492	MSI	8/13/14
8	Left B-Post Lower	Y	N/A	N/A	N/A
9	Left B-Post Middle	Y	N/A	N/A	N/A
10	Front Seat Track	Y	12245	Endevco	8/8/14
11	Rear Seat Structure	Y	N/A	N/A	N/A
12	Right Rear Occ. Compartment	Y	13474	Endevco	6/18/14
13	Engine Block	X	A145483	MSI	8/16/14
	Engine Block	Y	12276	Endevco	8/8/14
14	Rear Floorpan Above Axle	X	A135445	MSI	8/22/14
	Rear Floorpan Above Axle	Y	MS22902	MSI	10/19/14
	Rear Floorpan Above Axle	Z	MS22926	MSI	10/19/14

TABLE 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A128040	MSI	10/3/14
MDB Center of Gravity	Y	A124105	MSI	10/3/14
MDB Center of Gravity	Z	A104832	MSI	10/3/14
Left Frame at Rear Axle Centerline	X	A104798	MSI	10/3/14
Left Frame at Rear Axle Centerline	Y	A104808	MSI	10/3/14