

REPORT NUMBER: SPNCAP-TRC-11-001

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**Chrysler Group LLC
2011 Ram 1500 ST Quad Cab 4X2
NHTSA NUMBER: MB0303**

**PREPARED BY:
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**Report Date:
September 20, 2010**

FINAL REPORT

**PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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Approval Date: December 14, 2010

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

Date: _____

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16. Abstract A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject vehicle, a 2011 Ram 1500 ST Quad Cab 4X2 Pickup, in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on September 20, 2010. The impact velocity was 32.1 km/h, and the ambient temperature at the struck (driver's side) side of the target vehicle at the time of impact was 21° C. The test vehicle's post-test maximum crush was 462 mm at Level 2. The test or target vehicle's performance is given below: <table border="0"> <thead> <tr> <th></th> <th><u>Threshold</u></th> <th><u>Front SID-IIIs</u></th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria HIC):</td> <td>1000</td> <td>519</td> </tr> <tr> <td>Resultant Lower Spine Acceleration:</td> <td>82</td> <td>87.2 g's</td> </tr> <tr> <td>Combined Acetabular and Iliac Pelvic Force:</td> <td>5525</td> <td>6791.8 N</td> </tr> </tbody> </table> The door struck by the pole did not totally separate from the vehicle. All other doors including the tailgate not struck by the pole did not disengage from the latched position. The latch did not separate from the striker and the hinge components did not separate from each other or from the vehicle. The latch or hinge systems on the door did not pull out of the anchorages.					<u>Threshold</u>	<u>Front SID-IIIs</u>	Head Injury Criteria HIC):	1000	519	Resultant Lower Spine Acceleration:	82	87.2 g's	Combined Acetabular and Iliac Pelvic Force:	5525	6791.8 N
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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the MY11 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00125. The purpose of this test was to generate comparative side impact performance in a 2011 Ram 1500 ST Quad Cab 4X2 manufactured by Chrysler Group LLC. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure dated January 25, 2010.

TEST PROCEDURE

The side impact test was conducted in accordance with the Laboratory Test Procedure for the New Car Assessment Program Side Impact Rigid Pole Test dated January 25, 2010 and the corresponding Transportation Research Center Inc. (TRC Inc.) procedures. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

TRC Inc. does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a model year 2011 Ram 1500 ST Quad Cab 4X2. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.1 km/h. The weight of the vehicle as tested was 2403.0 kg. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on September 20, 2010. Pre-test and post-test photographs of the test vehicle and the pole, and the side impact dummy (SID IIs) are included in Appendix A of this report.

Two (2) real-time motion picture camera and nine (9) high-speed digital motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre-test and post-test photographs of the vehicle and Side Impact Dummy (SID IIs) can be found in Appendix A. One Part 572V (SID IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010.

The Part 572V (SID IIs) dummy was instrumented in the following locations:

- Head CG triaxial accelerometers
- Thorax upper, middle, and lower rib displacement potentiometers
- Abdomen upper and lower rib displacement potentiometers
- Lower spine triaxial accelerometers
- Iliac load cell
- Acetabulum load cell

The test vehicle was instrumented with twenty-one (21) structural transducers. All data channels were recorded with a fully self-contained onboard Kayser Threde Data Acquisition System. The data was digitally sampled at 12,500 samples per second and processed per Section 13.2 “Data Processing” of the Test Procedure.

The driver SID II's, Serial No. 305 was calibrated prior to this test.

Appendix A contains the still photograph prints. Appendix B contains the vehicle and dummy response data traces. Appendix C contains the SID II's configuration and performance verification data.

The following table summarizes the results of the test:

ATD	HIC (36 ms)	Resultant Lower Spine Acceleration	Pelvic Force (N)
SID IIs 5 th percentile female	519	87.2	Iliac Wing = 3708.2 Acetabular = 3134.4 Sum = 6791.8

Supplemental Restraint Information

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear Passenger Occupant Location 4	
	Installed	Deployed	Installed	Deployed
Frontal Airbag	Yes	Yes		
Knee Airbag	No	N/A		
Side Torso Airbag	No	N/A	N/A	N/A
Combination Head/Torso Side Airbag	No	N/A	N/A	N/A
Side Curtain/Tube Head Airbag	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	N/A	N/A
Seat Belt Load Limiter	Yes	Unknown	N/A	N/A
Other	N/A	N/A	N/A	N/A

NOTE: Right front airbag deployed.

The test data can be found on the NHTSA website at www.nhtsa.dot.gov.

TEST NOTES

The Vehicle's Center of Gravity Roll Angular Rate X-axis data channel, 11VEHCG0000AVXA, recorded anomalous data after approximately 79 milliseconds.

The Vehicle's Center of Gravity Pitch Angular Rate Y-axis data channel, 11VEHC0000AVYA, recorded anomalous data after approximately 51 milliseconds.

The Vehicle's Center of Gravity Yaw Angular Rate Z-axis data channel, 11VEHCG0000AVZA, recorded anomalous data after approximately 78 milliseconds.

The vehicle's Floor Sill Y-axis acceleration data channel, 11VEHC00LO00ACYA, recorded questionable data after 21.4 milliseconds.

The vehicle's Firewall Center Y-axis acceleration data channel, 112FIRCX0000ACYA, recorded no valid data after approximately 66 milliseconds.

The Pole Load Cell 2 Y-axis force data channel, KOFBAR020000FOXA, exceeded the full scale from approximately 61.8 to 97.0 milliseconds.

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MB0303	Anti-Lock Brakes	Yes
Model Year	2011	All-Wheel Drive	No
Make	Ram	Power Steering	Yes
Model	1500 ST Quad Cab	Driver Front Airbag	Yes
Body Style	4-door Pickup	Driver Curtain Airbag	Yes
VIN	1D7RB1GK6BS07318	Driver Head/Torso Airbag	No
Color	Brown pearl	Driver Torso Airbag	No
Delivery Date	9/1/2010	Driver Torso/Pelvis Airbag	No
Odometer Reading (miles)	14	Driver Pelvis Airbag	No
Dealer	Fred Martin Superstore	Driver Knee Airbag	No
Transmission	Automatic	Rear Pass. Curtain Airbag	Yes
Final Drive	Rear	Rear Pass. Head/Torso Airbag	No
Number of Cylinders	6	Rear Pass. Torso Airbag	No
Engine Displacement (L)	3.7	Rear Pass. Torso/Pelvis Airbag	No
Engine Placement	Transverse	Rear Pass. Pelvis Airbag	No
Roof Rack	No	Pretensioners	Yes
Sunroof / T-Top	No	Load Limiters	Yes
Tinted Glass	Yes	Automatic Door Locks	No
Traction Control	Yes	Bucket Seats	No
Power Brakes	Yes	Tilt Steering	Yes
Front Disc	Yes	Other – AM/FM/CD	Yes
Rear Disc	Yes	Other	No
Does owner's manual detail instructions on disabling ADLs?			N/A

DATA FROM CERTIFICATION LABEL

Manufactured by	Chrysler Group LLC	GVWR (kg)	3040
Date of Manufacture	8-10	GAWR Front (kg)	1679
		GAWR Rear (kg)	1770

VEHICLE SEATING AND WEIGHT CAPACITY DATA

	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	3	3	N/A	6	(A)
Vehicle Capacity Weight (VCW) (kg)				830	(B)
DSC X 68.04 kg				408	(A-B)
Rated Cargo and Luggage Weight (RCLW) (kg)				422	

VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 (CONTINUED)

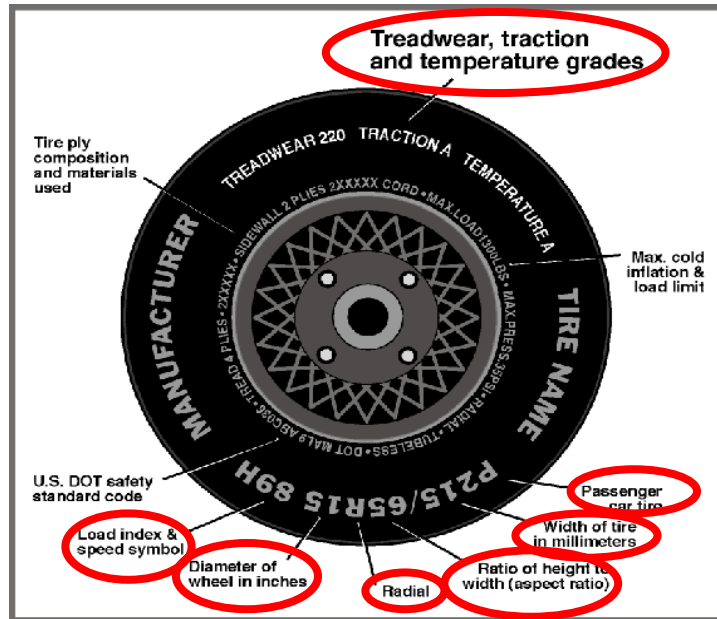
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure	300	300
Cold / Test Pressure (kPa)	276	276
Recommended Tire Size	P265/70R17	P265/70R17
Tire Size on Vehicle	P265/70R17	P265/70R17
Tire Manufacturer	Goodyear	Goodyear
Tire Model	Wrangler SR-A	Wrangler SR-A
Load Index & Speed Symbol	113R	113R
Treadwear	500	500
Traction Grade	A	A
Temperature Grade	B	B
Tire Plies Sidewall	2 ply polyester	2 ply polyester
Tire Plies Tread	2 ply polyester, 2 ply steel	2 ply polyester, 2 ply steel
Tire Material	Polyester & steel	Polyester & steel
DOT Safety Code Left	4BT6 EX WR2810	4BT6 EX WR2810
DOT Safety Code Right	4BT6 EX WR2810	4BT6 EX WR2810

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	620.8	510.0		657.0	548.2		646.4	596.0	
Right	kg	616.2	478.6		664.4	533.4		620.0	558.8	
Ratio	%	55.6	44.4		55.0	45.0		52.3	47.7	
Totals	kg	1237.0	988.6	2225.6	1321.4	1081.6	2403.0	1266.4	1154.8	2421.2

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2225.6	(A)
Weight of 1 P572V ATD (SIDIIs)	kg	49.9	(B)
Rated Cargo/Luggage Weight (RCLW) ¹	kg	136.0	(C)
Vehicle Target Weight (TVTW)	kg	2411.5	(A+B+C+)

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded
Driver Door Sill Angle (front-to-rear)*	Deg.	-0.7	-1.5	-0.5
Front Passenger Sill Angle (front-to-rear)*	Deg.	-0.7	-0.3	-0.6
Front Bumper Angle (left-to-right)**	Deg.	0.0	-0.3	-0.2
Rear Bumper Angle (left-to-right)**	Deg.	-0.6	-0.6	-0.7
Vehicle CG (aft of front axle)	mm	1584	1605	1605
Vehicle CG (Left (+) / Right (-) from longitudinal Centerline)	mm	14	3	22.7

*Front up is positive **Left up is positive

GENERAL VEHICLE TEST DATA

Measurement Description	Units	Value
Weight of Ballast in Cargo Area	kg	23.0
Weight of Vehicle Components Removed	kg	0.0

Vehicle parts removed to make Target Vehicle Test Weight: None

TEST VEHICLE VERTICAL IMPACT POINT DATA

Measured Parameter	Units	Value
Vertical Impact Reference Line (Aft of Front Axles)	mm	1222
Actual Impact Point (Aft of Front Axle)	mm	1225
Impact Point Difference (- forward / + rearward)	mm	+3

¹ Rated cargo and luggage weight calculated was 366.0 kg. 136.0 kg was used to determine target test weight.

DATA SHEET NO. 2

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

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2
Test Program: SPNCAP Side Impact

NHTSA No.: MB0303
Test Date: 09/20/10

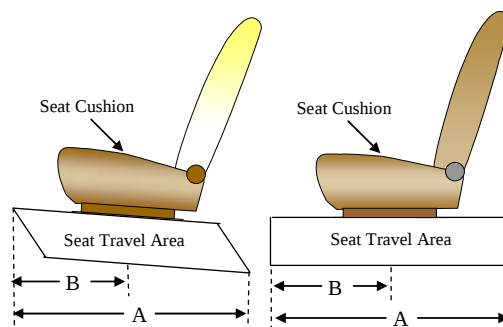
SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for the driver.

SEAT FORE/AFT POSITIONING

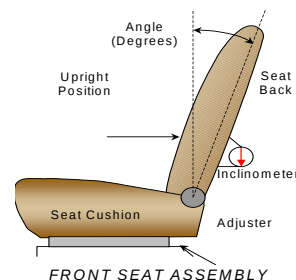
	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	24	0
Passenger	24	12

Position zero is full forward



NORMAL DESIGN RIDING POSITION SEAT BACK ANGLE POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle. The procedure is as follows: The inclinometer was placed at head restraint post after the dummy was positioned.



Vertical Impact Reference Line (Aft of Front Axles)
Actual Impact Point (Aft of Front Axle)
Impact Point Difference (- forward / + rearward)

SEAT BACK ANGLE

	Degrees	Detent
Driver Seat Back Angle with Seated Dummy	3.5	N/A
Front Passenger Seat Back Angle	Full rearward	N/A
Struck Side Rear Seat Back Angle	Fixed	Fixed
Non-Struck Side Rear Passenger Seat Back Angle	Fixed	Fixed

SEAT BELT UPPER ANCHORAGE

	Total No. of Positions	Placed in Position No.
Driver Seat	5	5

Position number one is the uppermost adjustment position.

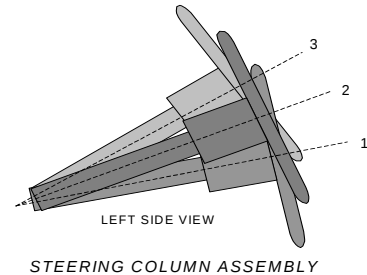
DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT
AND FUEL SYSTEMS DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2
 Test Program: SPNCAP Side Impact

NHTSA No.: MB0303
 Test Date: 09/20/10

STEERING COLUMN ADJUSTMENT

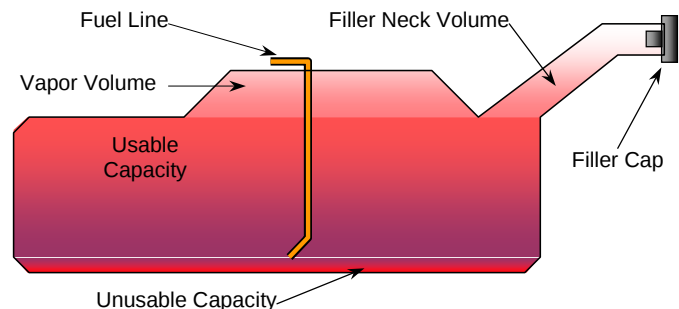
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN POSITIONS

	Degrees	Fore/Aft Position, mm
Lowermost Position No. 1	62.5	
Geometric Center Position No. 2	66.5	
Uppermost Position No. 3	70.5	
Test Position	66.5 (notch 5 of 9)	
Telescoping Steering Wheel Travel		Fixed

The test vehicle is equipped with an electric fuel pump located inside the tank. The fuel pump operates for a few seconds after the ignition is placed in the “ON” position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left side of bed. The standard fuel tank occupies the area in front of the rear axle along the left frame rail.



VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of “Standard Tank”	98
Usable Capacity of “Optional” Tank	121
Usable Capacity of Standard Tank from owners manual	98
Usable Capacity of Optional Tank from owner’s manual	121
Usable Capacity used for FMVSS 301 92-94%	90.2 - 92.1
Actual Amount of Solvent used	91.6
1/3 of Usable Capacity	32.7

DATA SHEET NO. 3

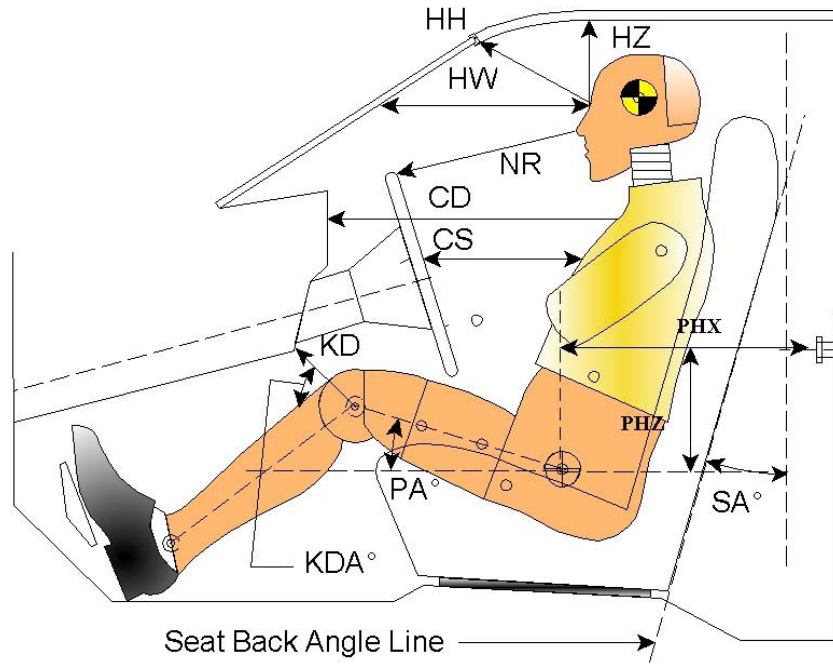
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



Code	Measurement Description	Driver S/N 305	
		Length (mm)	Angle (°)
HH	Head to Header	381	
HW	Head to Windshield	663	
HZ	Head to Roof	250	
NR	Nose to Rim	269	
CD	Chest to Dash	458	
CS	Chest to Steering Wheel	192	
KDL	Left Knee to Dash	75	26.2
KDR	Right Knee to Dash	73	26.2
PA	Pelvic Angle		20.6
PHX	H-Point to Striker (X-Axis)	355	
PHZ	H-Point to Striker (Z-Axis)	-29	
SA	Seat Back Angle		3.5

NOTE: Dummy measurements were achieved using a tape measure.

DATA SHEET NO. 4

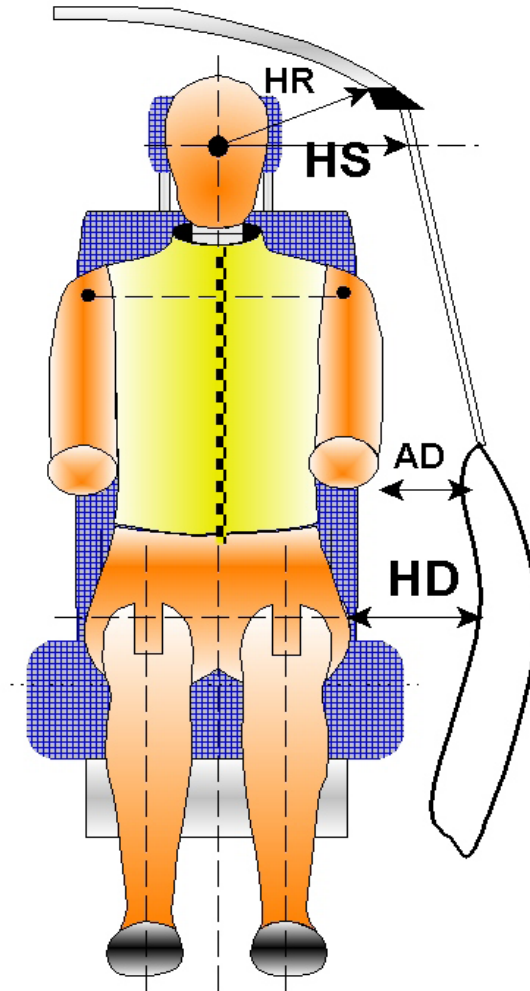
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



Code	Measurement Description	Driver S/N 305 Length (mm)
HR	Head to Side Header	261
HS	Head to Side Window	358
AD	Arm to Door	173
HD	H-Point to Door	119

NOTE: Dummy measurements were achieved using a tape measure.

DATA SHEET NO. 5

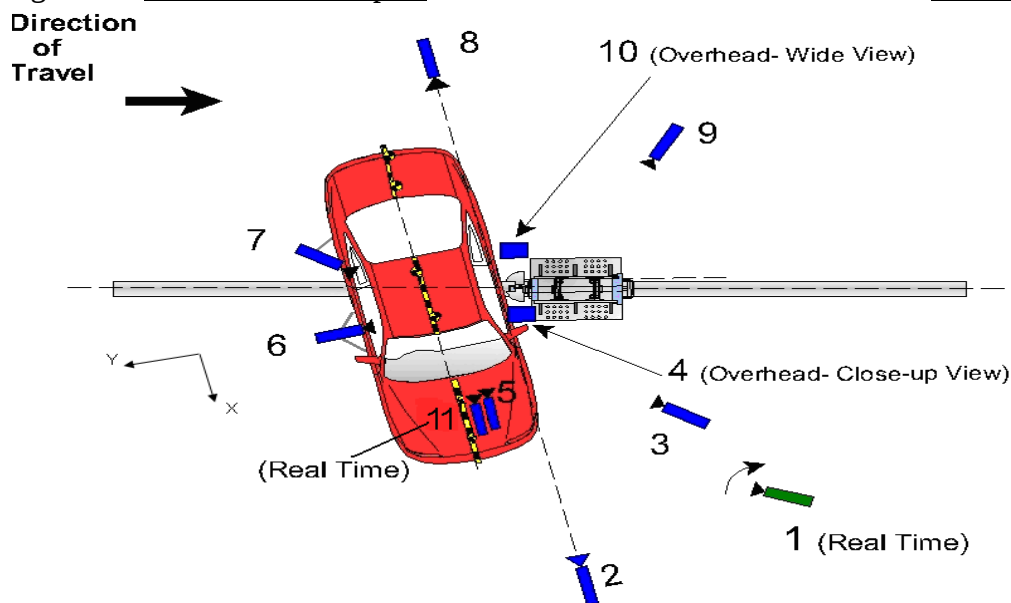
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



No.	Camera View	Location (mm)			Lens (mm)	Frame Speed (fps)
		X	Y	Z		
1	Real time pan view of impact	---	---	---	---	30
2	Front ground level – impact view	---	---	---	---	1000
3	Impact side 45° – forward pole view	---	---	---	---	1000
4	Overhead close-up view of impact	---	---	---	---	1000
5	Onboard – dummy front view				---	1000
6	Onboard – dummy side view				---	1000
7	Onboard – dummy rear oblique view				---	1000
8	Rear ground level – impact view	---	---	---	---	1000
9	Impact side 45° – rearward pole view	---	---	---	---	1000
10	Overhead wide view of impact	---	---	---	---	1000
11	Real Time dummy front view	---	---	---	---	30

REFERENCE: + X = Forward of Vehicle, + Y = Right of Vehicle, + Z = Down (from point of impact for X and Y; from ground for Z)

NOTE: Vehicle was at a 15° angle to the rigid pole

INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	21
Pole Load Cells	8
Contact Switches	5
Total No. of Data Channels	50

¹ The camera locations and lens information were not recorded.

DATA SHEET NO. 6

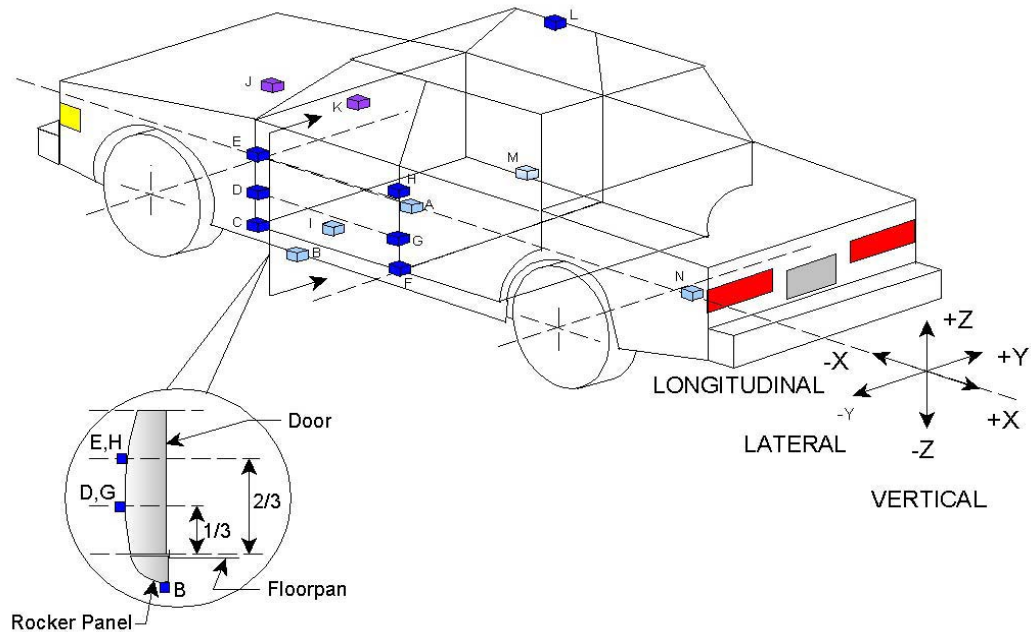
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
A	Vehicle CG acceleration	4190	0	720
	Vehicle CG rotation	4190	43	720
B	Left Floor Sill	4265	-760	527
C	A-Pillar Sill	4580	-810	590
D	A-Pillar Low	4673	-920	810
E	A-Pillar Mid	4665	-890	1143
F	B-Pillar Sill	3507	-786	605
G	B-Pillar Low	3565	-932	835
H	B-Pillar Mid	3558	-902	1185
I	Driver Seat	3822	-685	625
J	Engine Top	5270	-165	926
K	Firewall	5095	0	1200
L	Right Roof	3855	678	1785
M	Right Floor Sill	3970	755	545
N	Rear Floorpan	945	0	837

NOTE: Accelerometer measurements were achieved by using a tape measure.

Reference Points: X = + Forward

Y = + To right

Z = + Down

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2
Test Program: SPNCAP Side Impact

NHTSA No.: MB0303
Test Date: 09/20/10



Load Cell Locations	Height From Top of Carrier (mm)
1	87
2	468
3	648
4	978
5	1168
6	1651
7	1816
8	2057

DATA SHEET NO. 8**POST TEST OBSERVATIONS**Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2NHTSA No.: MB0303Test Program: SPNCAP Side ImpactTest Date: 09/20/10**TEST DUMMY INFORMATION AND CONTACT POINTS**

Description	Driver Dummy
Dummy Type / Serial No.	SID II's SBLD / 305
Head Contact	Side curtain airbag, front airbag, head restraint
Upper/Lower Torso Contact	Door liner/Door liner
Left /Right Knee Contact	Door liner/None

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Doors	Unlocked/Jammed shut	Unlocked/Jammed shut
Right Side Doors	Unlocked/Closed and operational	Unlocked/Closed and operational
Hatch and Other		Unlocked/Closed and operational
Seat Movement	None	None
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of	Observations and Conclusions
Impact Door	No
Non-Impact Doors	None unlatched, no separation from latch & hinges or vehicle
Windshield Damage	Broken
Window Damage	Left front shattered
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear Passenger Occupant Location 4	
	Installed	Deployed	Installed	Deployed
Frontal Airbag	Yes	Yes		
Knee Airbag	No	N/A		
Side Torso Airbag	No	N/A	N/A	N/A
Combination Head/Torso Side Airbag	No	N/A	N/A	N/A
Side Curtain/Tube Head Airbag	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	N/A	N/A
Seat Belt Load Limiter	Yes	Unknown	N/A	N/A
Other	N/A	N/A	N/A	N/A

VEHICLE SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset from Vertical Impact Reference Line	mm	+/- 38	3 rearward
Light Trap No. 1 Velocity Primary	km/h	30.4 to 32.0	32.1
Light Trap No. 2 Velocity Redundant	km/h	30.4 to 32.0	32.1

DATA SHEET NO. 9

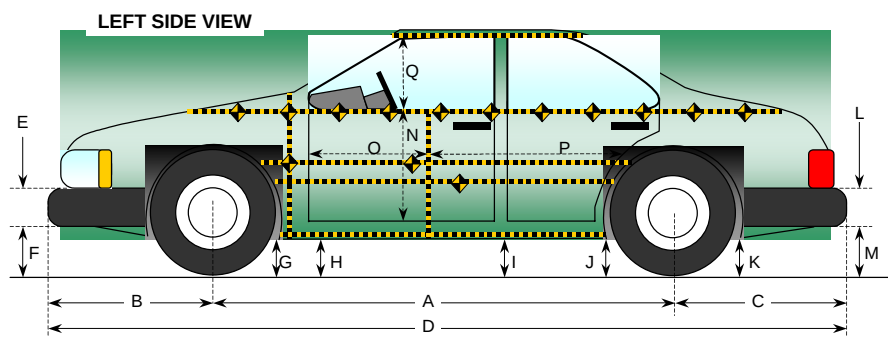
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



Left Side View

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

All Measurements in mm with a tolerance of ± 3 mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3565	3565	0
B	Front Axle to Front Surface of Vehicle	1030	1050	-20
C	Rear Axle to Rear Surface of Vehicle	1210	1210	0
D	Total Length at Centerline	5805	5800	5
E	Front Bumper Thickness	255	255	0
F	Front Bumper Bottom to Ground	355	352	3
G	Sill Height at Front Wheel Well	410	399	11
H	Sill Height at Front Door Leading Edge	412	400	12
I	Sill Height at "B" Pillar	436	434	2
J1	Sill Height at Rear Wheel Well	450	462	-12
J2	Pinch Weld Height at Rear Wheel Well	369	373	-4
K	Sill Height Aft of Rear Wheel Well	460	498	-38
L	Rear Bumper Thickness	192	192	0
M	Rear Bumper Bottom to Ground	535	603	-68
N	Sill Height to Window Bottom Sill	882	882	0
O	Front Door Leading Edge to Impact CL	673	510	163
P	Rear Door Trailing Edge to Impact CL	1253	1170	83
Q	Front Window Opening	484	462	22
R	Right Side Length	5670	5740	-70
S	Left Side Length	5670	5730	-60
T	Vehicle Width at "B" Post	1512	1512	0

NOTE: Measurements were achieved by using a tape measure.

DATA SHEET NO. 10

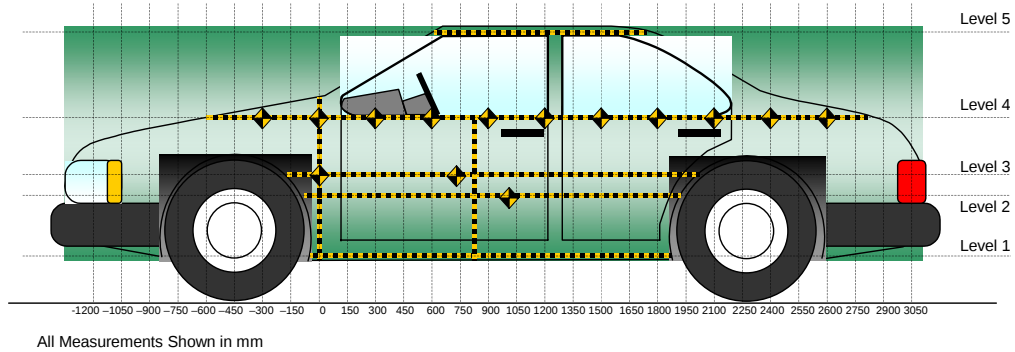
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



LEFT SIDE VIEW

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measurement Description	Height Above Ground
5	Window Top	1820
4	Window Sill	1245
3	Mid Door	882
2	Occupant H-Point	922
1	Sill Top	430

NOTE: Measurements were taken with the vehicle in the "As Tested" condition using a tape measure and were taken along the estimated crush grid vertical impact reference line.

DATA SHEET NO. 10 (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900		988	986	899			992	989	913			-5	-3	-14	
-750	904	987	986	908	858	864	977	975	901	862	40	10	12	7	-4
-600	908	985	984	914	826	800	887	884	862	796	107	98	99	52	30
-450	912	984	983	917	790	733	795	793	802	721	179	189	190	116	69
-300	914	983	983	921	754	659	699	699	715	645	255	284	284	206	109
-150	916	984	983	924	718	583	605	603	613	564	333	378	380	310	155
0	919	984	984	927	700	518	522	523	523	462	401	462	461	405	238
150	921	986	987	931	696	563	569	569	561	500	358	418	417	370	196
300	922	989	990	934	696	681	710	710	694	569	241	279	280	240	127
450	923	990	990	935	697	731	837	835	800	613	191	152	155	135	84
600	924	991	992	936	699	767	866	863	828	639	157	125	128	108	60
750	924	993	993	937	702	799	894	892	856	649	125	99	101	80	53
900	924	993	994	937	704	825	921	920	883	652	99	72	74	55	52
1050	923	994	994	938	706	848	949	947	909	653	75	45	47	28	53
1200	916	991	991	937	702	863	944	943	887	651	53	48	48	50	50
1350															
1500															
1650															

Reference plane is parallel to test vehicle longitudinal centerline.

Pre-test measurements are "As Tested" condition.

Measurements forward of impact reference line are negative

The target impact point was 23 mm forward of the estimated crush grid impact reference line.

Measurements were achieved using the Coordinate Measurement Machine (FARO)

	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	401	462	461	405	238
Distance from Actual Impact Point	mm	-20	-20	-20	-20	-20

DATA SHEET NO. 10 (CONTINUED)

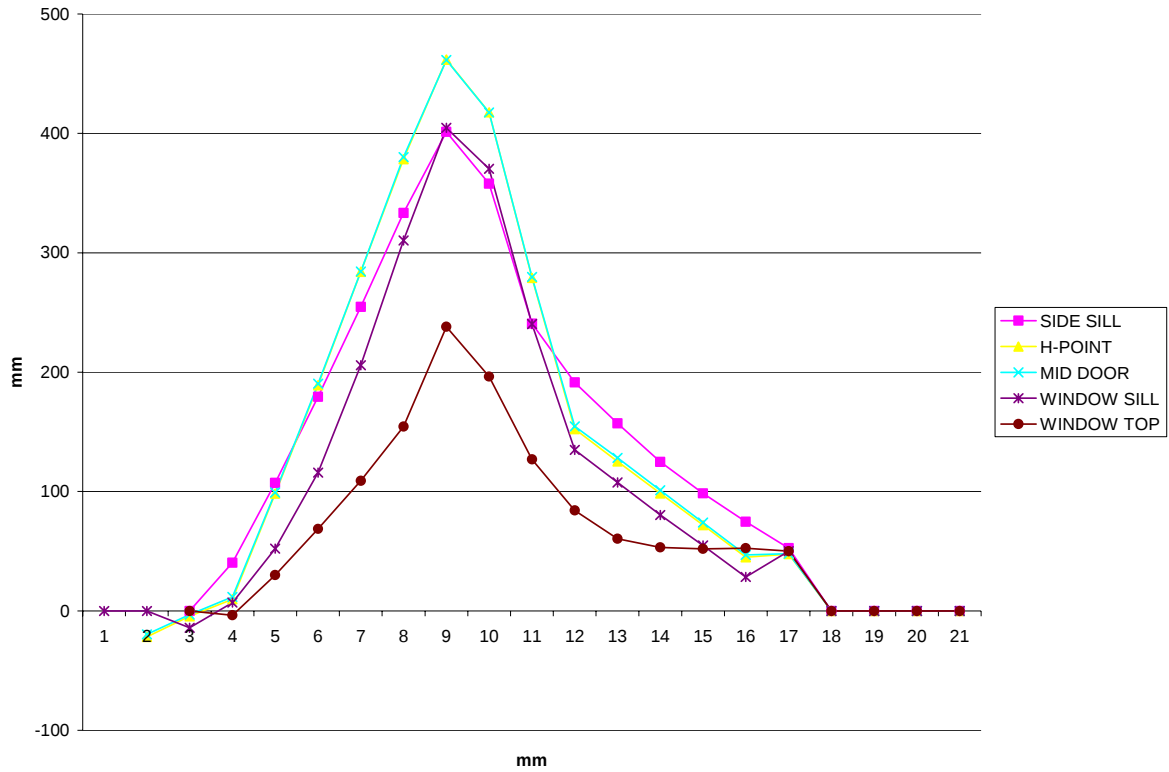
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10



DATA SHEET NO. 11A

FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature : 21 Test Time: 14:06

Stoddard Solvent Spillage Measurements

A. From impact until vehicle motion ceases: 0 oz.

(Maximum allowable = 1 ounce)

B. For the 5 minute period after motion ceases: 0 oz.

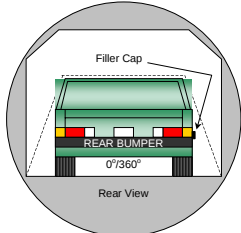
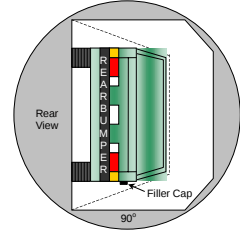
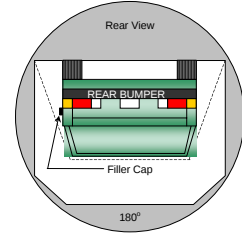
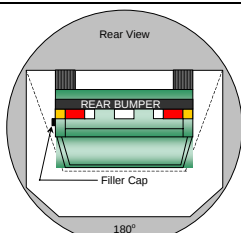
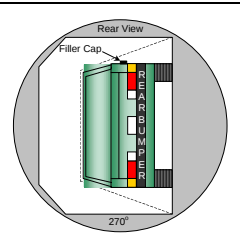
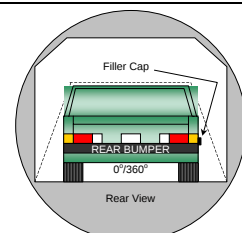
(Maximum allowable = 5 ounces)

C. For the following 25 minutes: 0 oz.

(Maximum allowable = 1 oz./minute)

D. Spillage Details: None

FMVSS 301 STATIC ROLLOVER DATA

			1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds. 2. The position hold time at each position is 300 seconds (minimum). 3. Details of Stoddard Solvent spillage locations: None
0° to 90° 90° to 180°			
			
180° to 270° 270° to 360°			

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage Collection Time (min)	Spillage (oz.)	Spillage Collection Time (min)	Spillage (oz.)	Spillage Collection Time (min)	Spillage (oz.)
0° to 90°	120	300	First 5	0	Sixth	0	Seventh	0
90° to 180°	120	300	First 5	0	Sixth	0	Seventh	0
180° to 270°	120	300	First 5	0	Sixth	0	Seventh	0
270° to 360°	120	300	First 5	0	Sixth	0	Seventh	0

DATA SHEET NO. 12

DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA

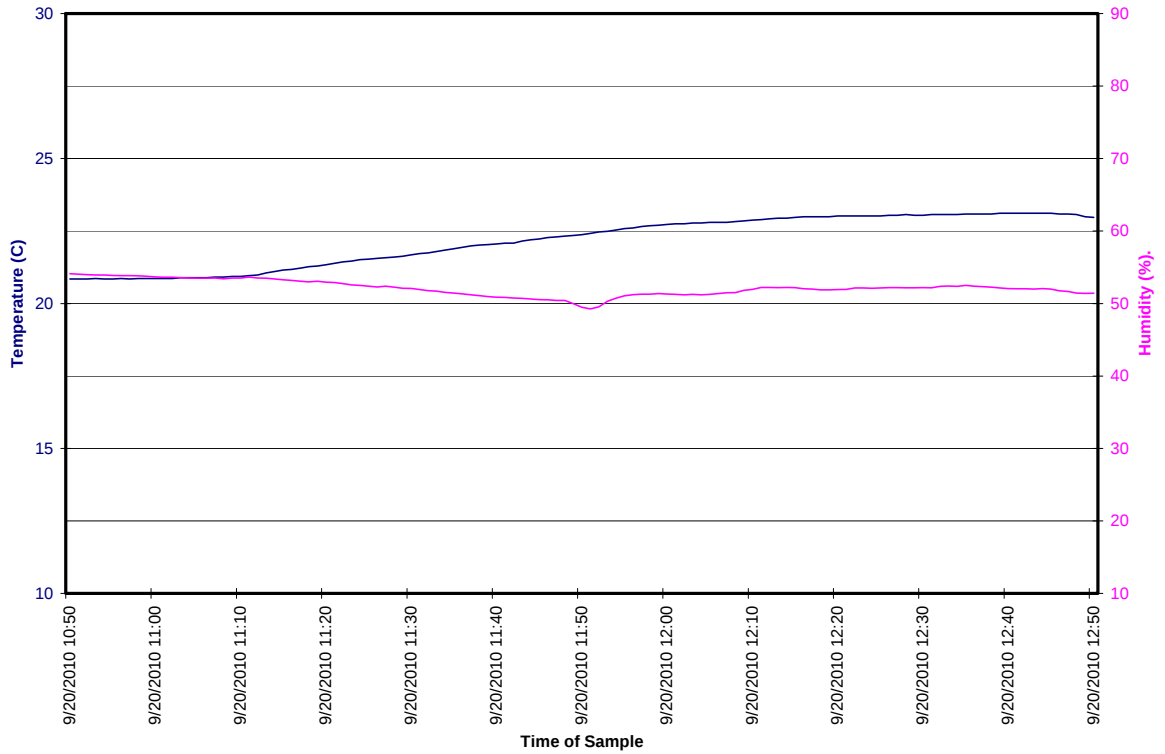
Test Vehicle: 2011 Ram 1500 ST Quad Cab 4X2

NHTSA No.: MB0303

Test Program: SPNCAP Side Impact

Test Date: 09/20/10

MB0303 75 Degree Oblique Rigid Pole Side NCAP Impact 100920; Test Time 12:50



APPENDIX A
PHOTOGRAPHS

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No. 003	Pre-Test Frontal View of Test Vehicle	A-2
No. 004	Post-Test Frontal View of Test Vehicle	A-2
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No. 006	Post-Test Left Front Three-Quarter View of Test Vehicle	A-3
No. 006a	Post-Test Left Front Three-Quarter View of Test Vehicle	A-4
No. 007	Pre-Test Left Side View of Test Vehicle	A-5
No. 008	Post-Test Left Side View of Test Vehicle	A-5
No. 009	Pre-Test Left Rear Three-Quarter View of Test Vehicle	A-6
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No. 028	Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning	A-18
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No. 030	Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket	A-19
No. 031	Pre-Test View of Dummy's Head Showing Dummy's Head is Level	A-19
No. 032	Pre-Test Placement of Dummy's Feet	A-20

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No. 036	Pre-Test Close-Up Left Side View of Driver Seat Track	A-22
No. 037	Post-Test Close-Up Left Side View of Driver Seat Back	A-22
No. 038	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-23
No. 039	Pre-Test Dummy and Driver Door Clearance View	A-24
No. 040	Post-Test Dummy and Driver Door Clearance View	A-24
No. 041	Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment	A-25
No. 042	Post-Test Right Side View of Dummy and Front Seat Occupant Compartment	A-25
No. 043	Pre-Test Inner Driver Door Panel View	A-26
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No. 051	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-30
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No. 001 – As Delivered Right Front Three-Quarter View of Test Vehicle



No. 002 – As Delivered Left Rear Three-Quarter View of Test Vehicle



No. 003 – Pre-Test Frontal View of Test Vehicle



No. 004 – Post-Test Frontal View of Test Vehicle



No. 005 – Pre-Test Left Front Three-Quarter View of Test Vehicle

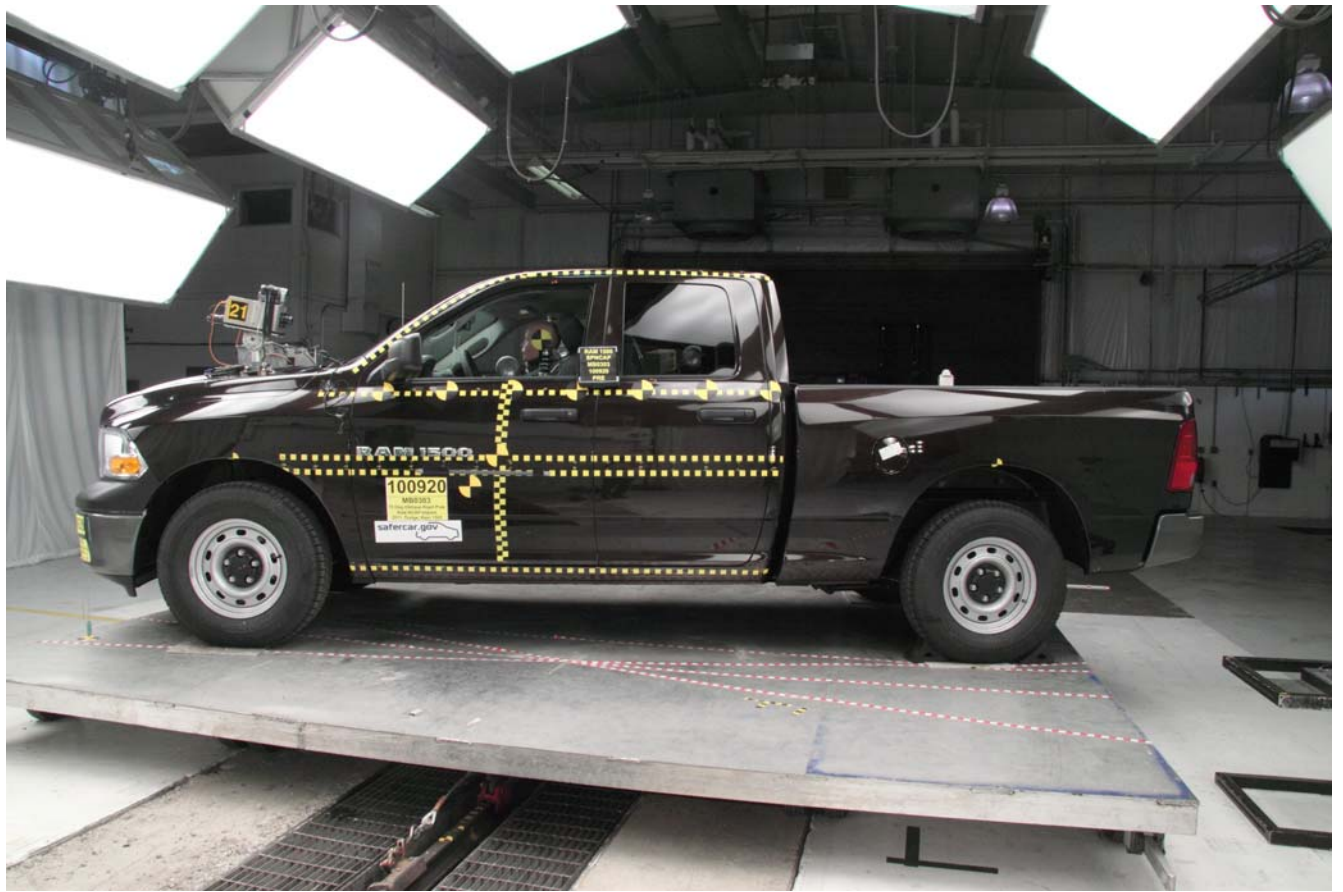


No. 006 – Post-Test Left Front Three-Quarter View of Test Vehicle



No. 006a – Post-Test Left Front Three-Quarter View of Test Vehicle

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No. 007 – Pre-Test Left Side View of Test Vehicle



No. 008 – Post-Test Left Side View of Test Vehicle



No. 009 – Pre-Test Left Rear Three-Quarter View of Test Vehicle



No. 010 – Post-Test Left Rear Three-Quarter View of Test Vehicle



No. 010a – Post-Test Left Rear Three-Quarter View of Test Vehicle

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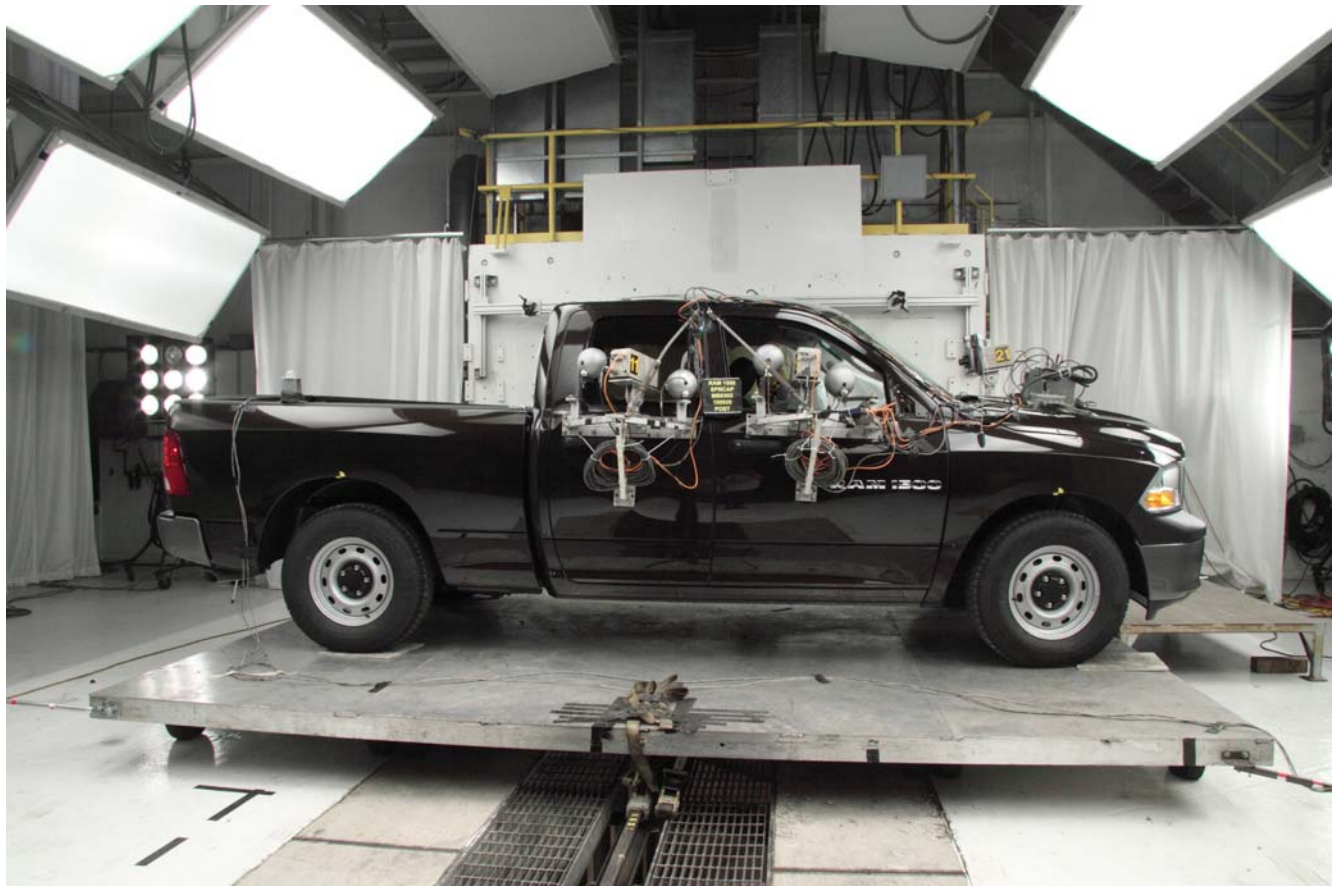
No. 011 – Pre-Test Rear View of Test Vehicle



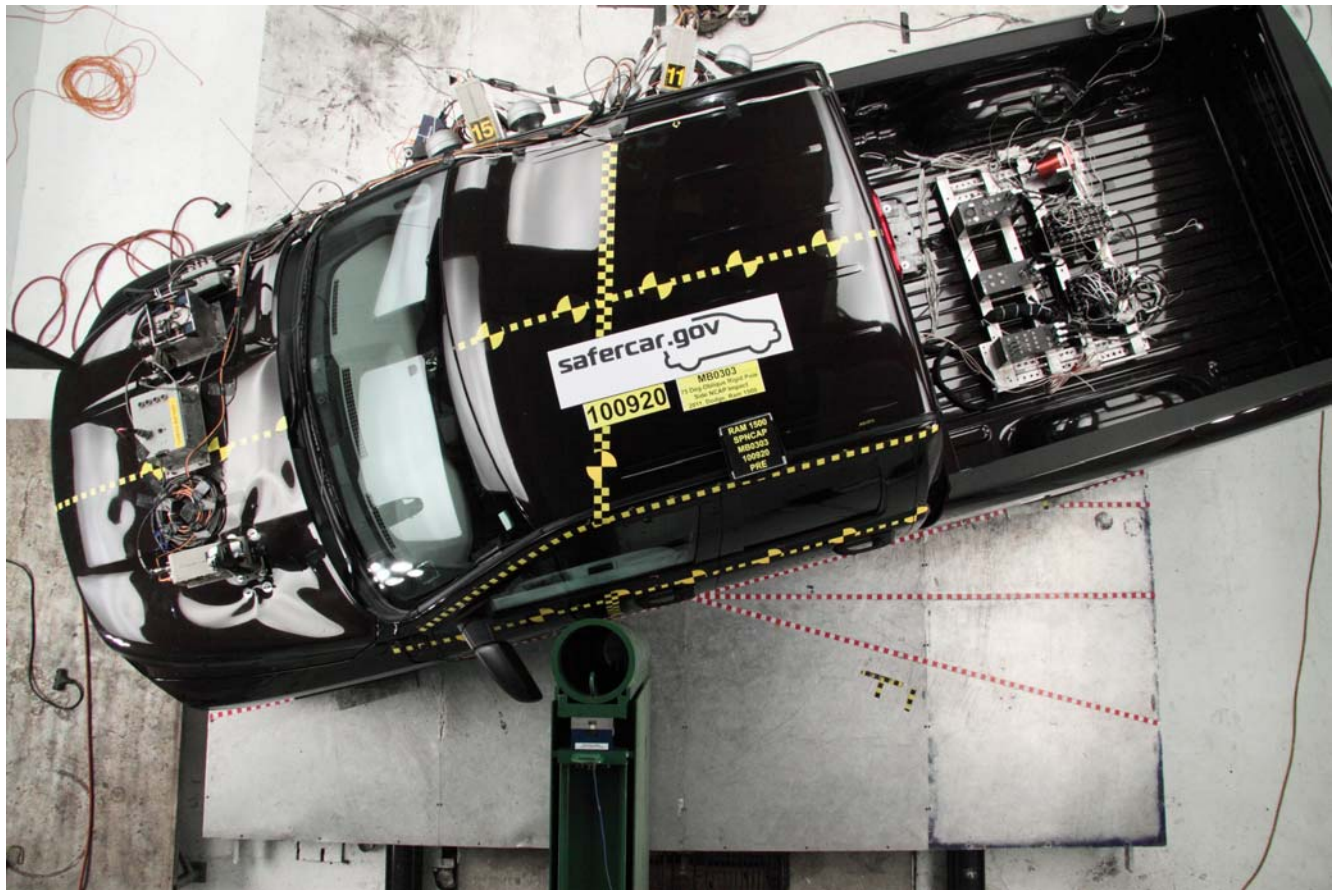
No. 012 – Post-Test Rear View of Test Vehicle



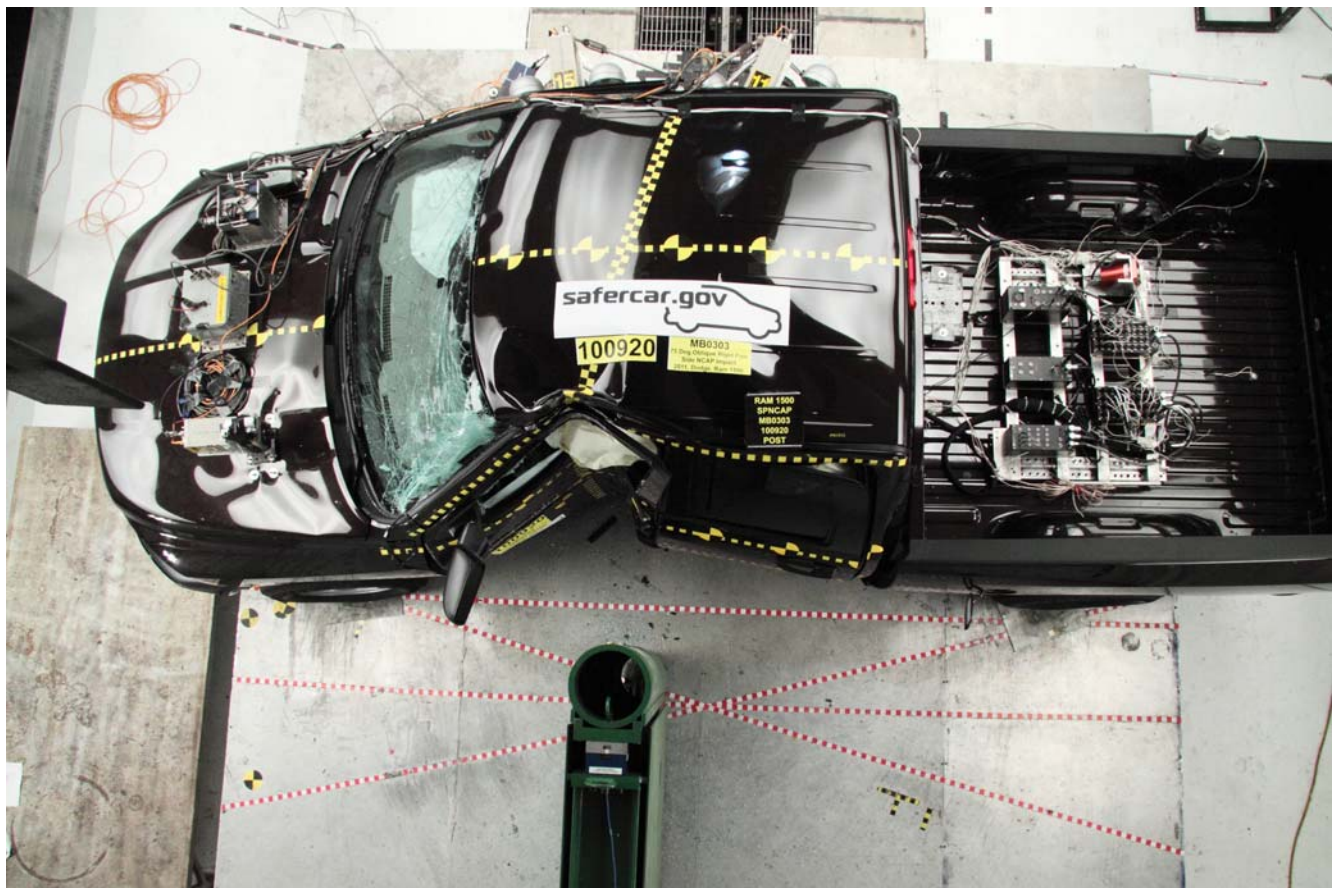
No. 013 – Pre-Test Right Side View of Test Vehicle



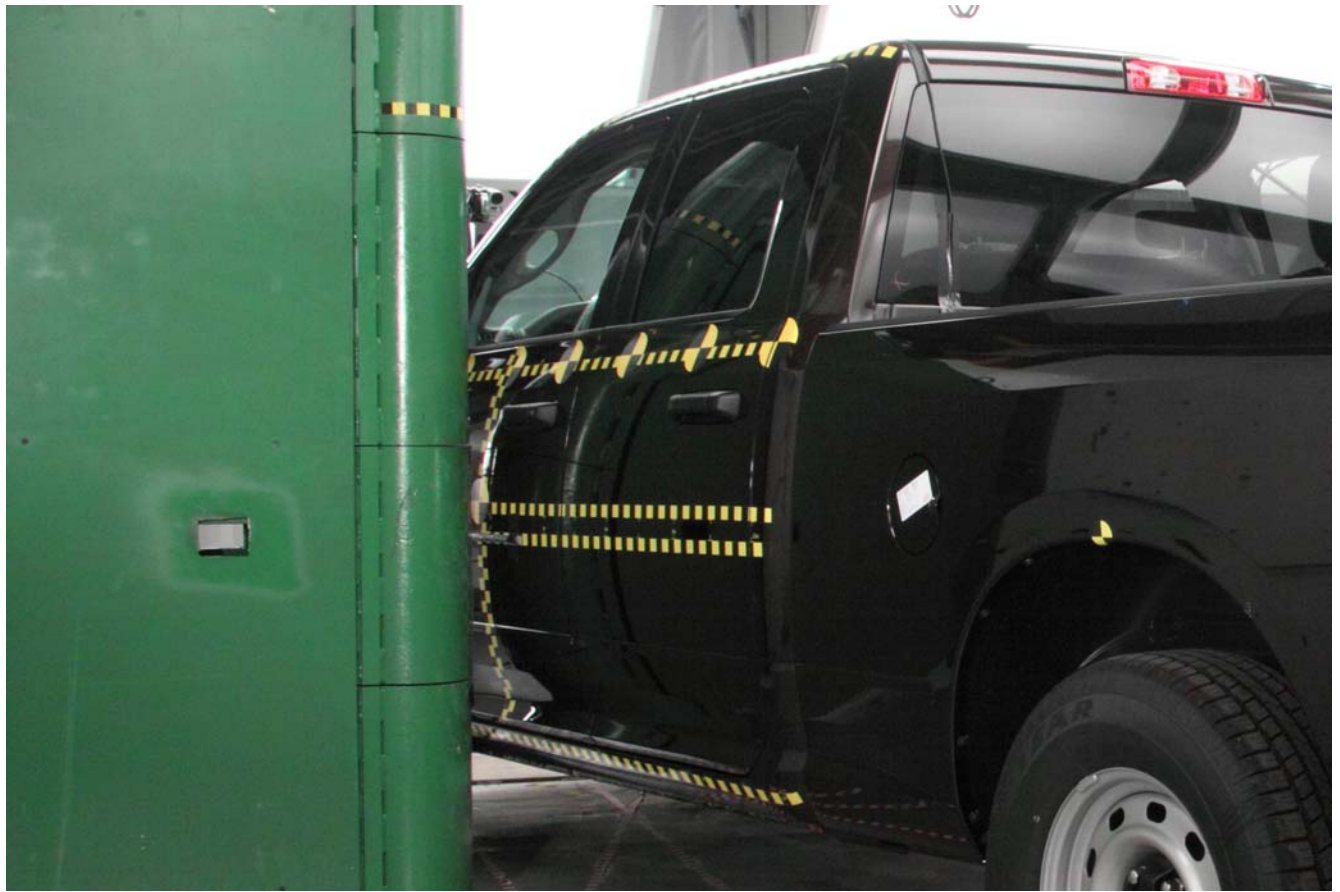
No. 014 – Post-Test Right Side View of Test Vehicle



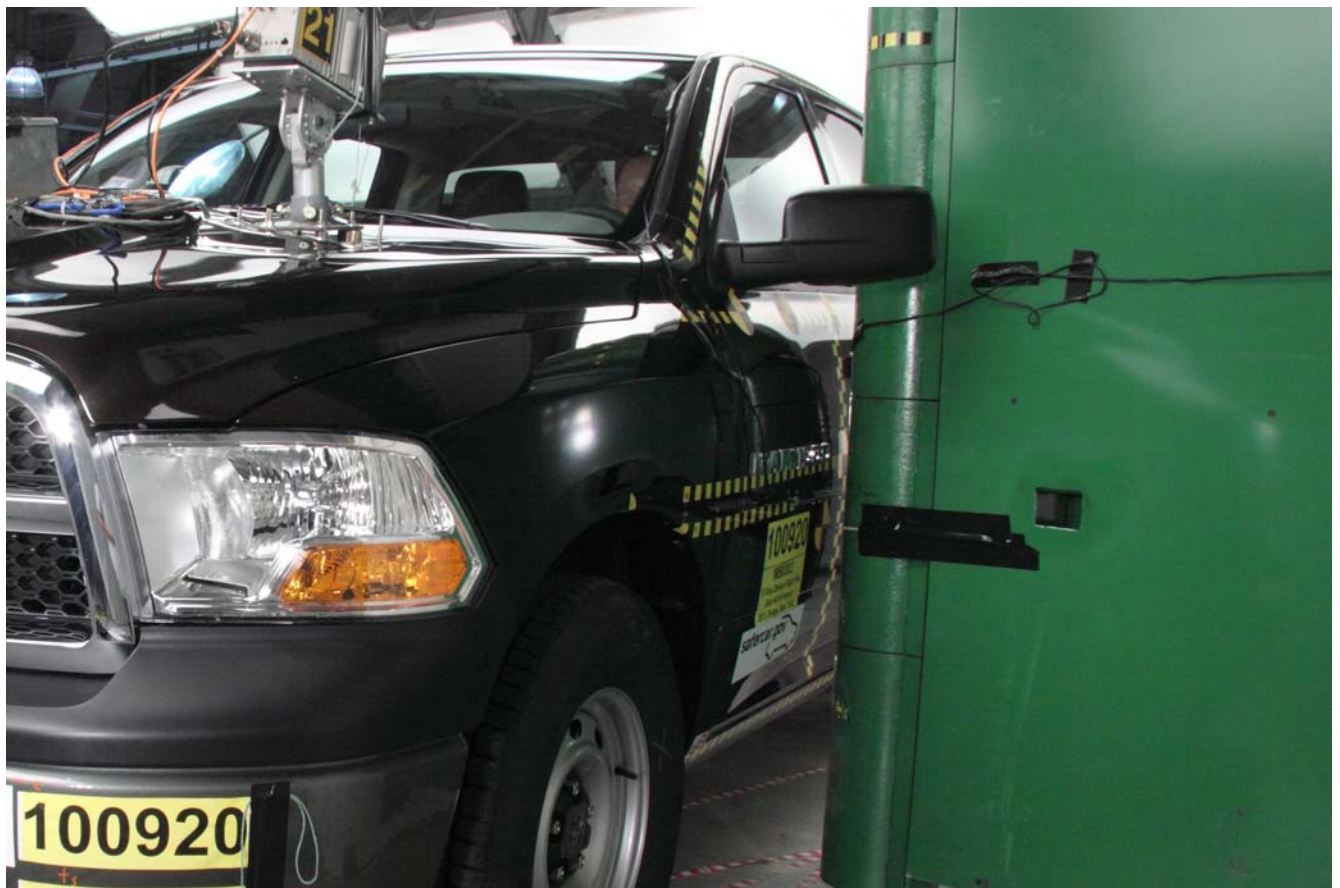
No. 015 – Pre-Test Overhead View of Test Vehicle and Pole



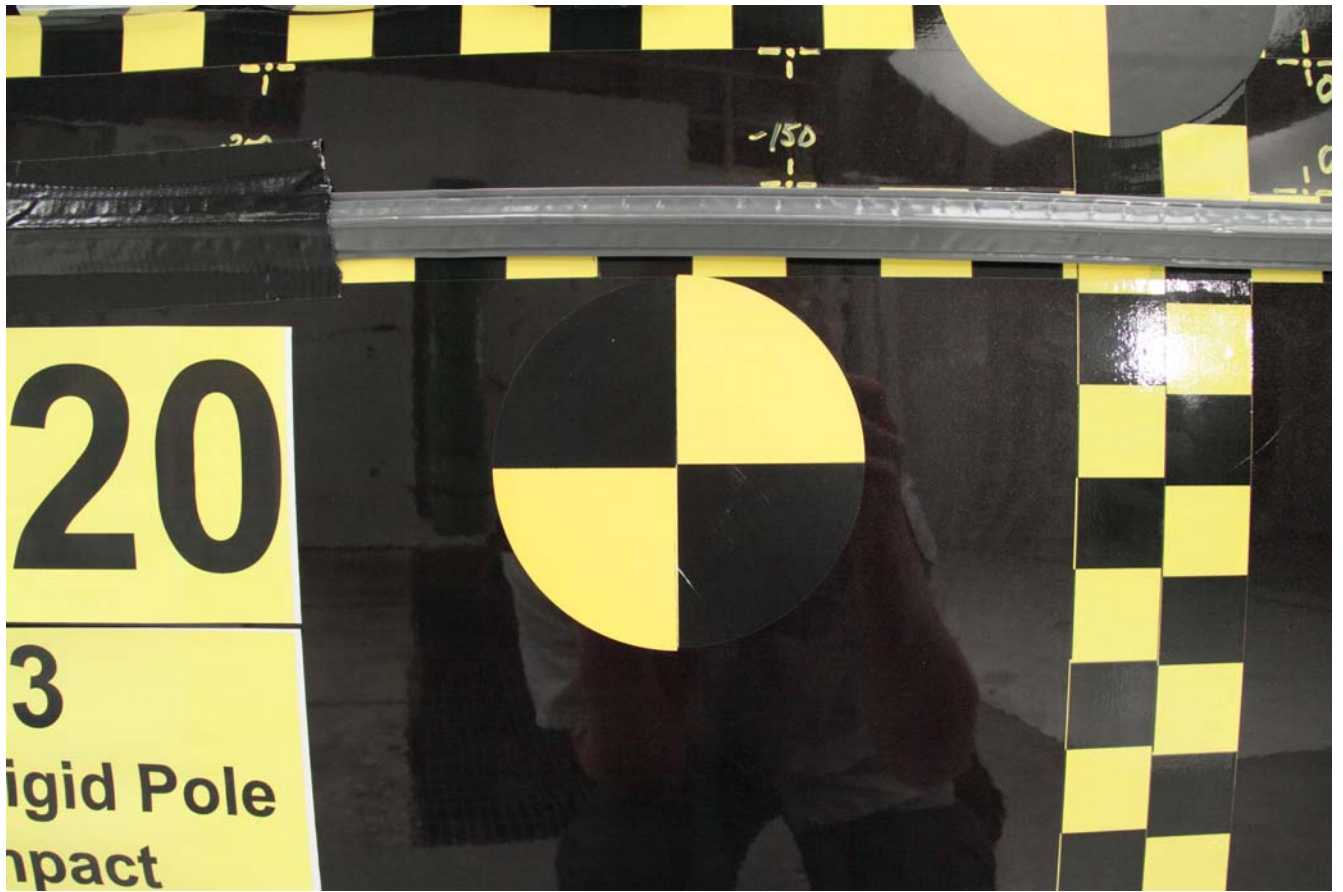
No. 016 – Post-Test Overhead View of Test Vehicle and Pole



No. 017 – Pre-Test Left Side View of Pole Positioned Against Side of Vehicle at Impact Point



No. 018 – Pre-Test Right Side View of Pole Positioned Against Side of Vehicle at Impact Point



No. 019 – Pre-Test Close-Up View of Impact Point Target

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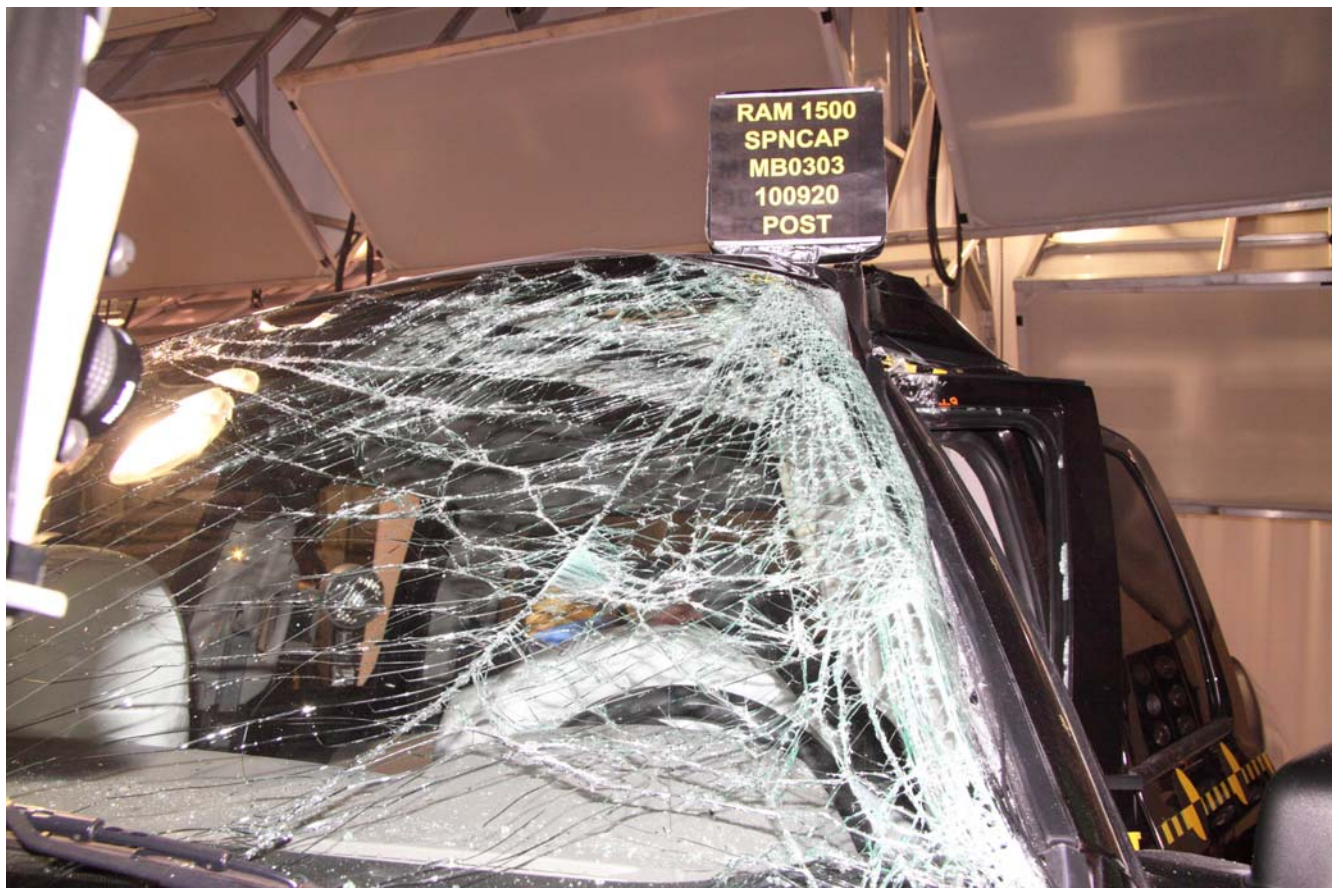
No. 019a – Pre-Test Close-Up View of Impact Point Target



No. 020 – Post-Test Close-Up View of Impact Point Target Showing Impact Location



No. 021 – Pre-Test Front Close-Up View of Dummy

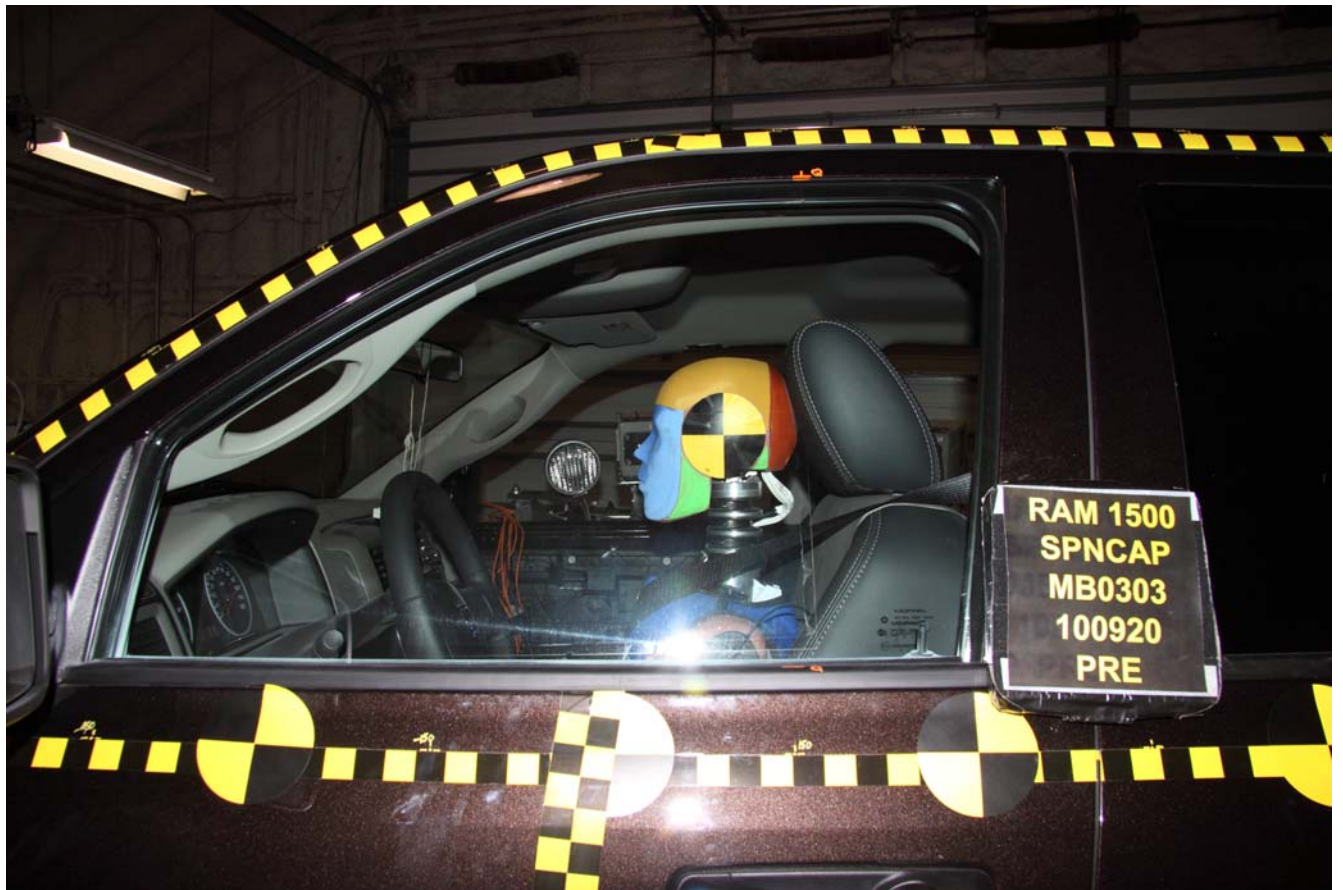


No. 022 – Post-Test Front Close-Up View of Dummy



No. 023 – Pre-Test Left Side View of Dummy Showing Belt, Chalking, and Contact Switches

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No. 024 – Pre-Test Left Side View of Dummy Shoulder and Driver Door Top View



No. 025 – Post-Test Left Side View of Dummy Shoulder and Driver Door Top View



No. 026 – Pre-Test Frontal View of Seat Back Prior to Dummy Positioning



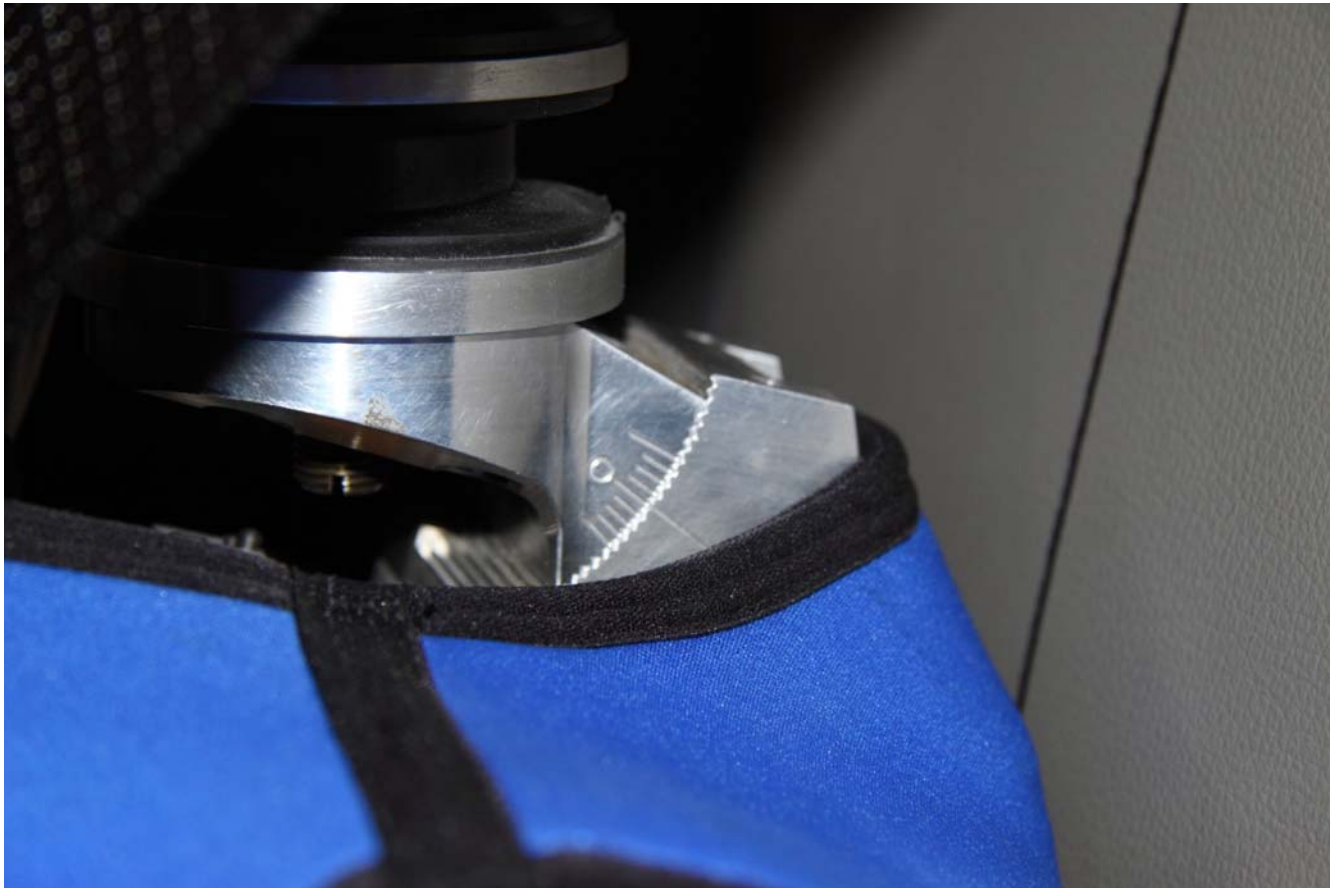
No. 027 – Pre-Test Frontal View of Dummy Head and Shoulders in Relation to Head Restraint



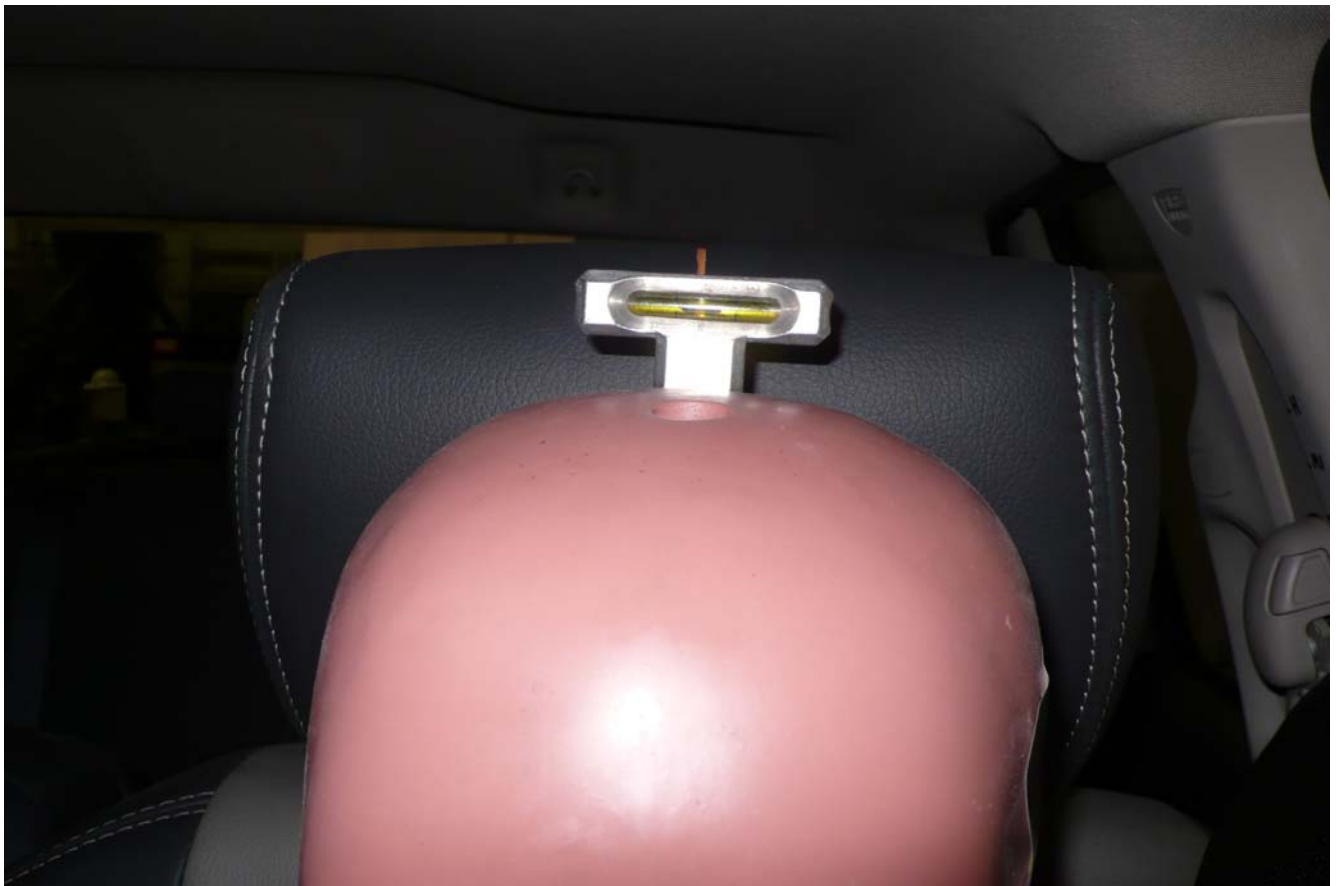
No. 028 – Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning



No. 029 – Pre-Test Overhead View of Dummy Thighs on Seat Pan



No. 030 – Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket



No. 031 – Pre-Test View of Dummy's Head Showing Dummy's Head is Level



No. 032 – Pre-Test Placement of Dummy's Feet



No. 033 – Pre-Test View of Belt Anchorage for Dummy



No. 034 – Pre-Test Left Side View of Steering Wheel



No. 035 – Pre-Test View of Parking Brake



No. 036 – Pre-Test Close-Up Left Side View of Driver Seat Track



No. 037 – Post-Test Close-Up Left Side View of Driver Seat Back



No. 038 – Pre-Test Close-Up View of Driver Seat Back or Head Restraint

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No. 039 – Pre-Test Dummy and Driver Door Clearance View



No. 040 – Post-Test Dummy and Driver Door Clearance View



No. 041 – Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment



No. 042 – Post-Test Right Side View of Dummy and Front Seat Occupant Compartment



No. 043 – Pre-Test Inner Driver Door Panel View



No. 044 – Post-Test Inner Driver Door Panel View Showing Dummy Contact Locations



No. 045 – Post-Test Dummy Close-Up Head Contact with Vehicle View



No. 046 – Post-Test Dummy Close-Up Head Contact with Side Airbag View



No. 047 – Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



No. 048 – Post-Test Dummy Close-Up Torso Contact with Side Airbag View



No. 049 – Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



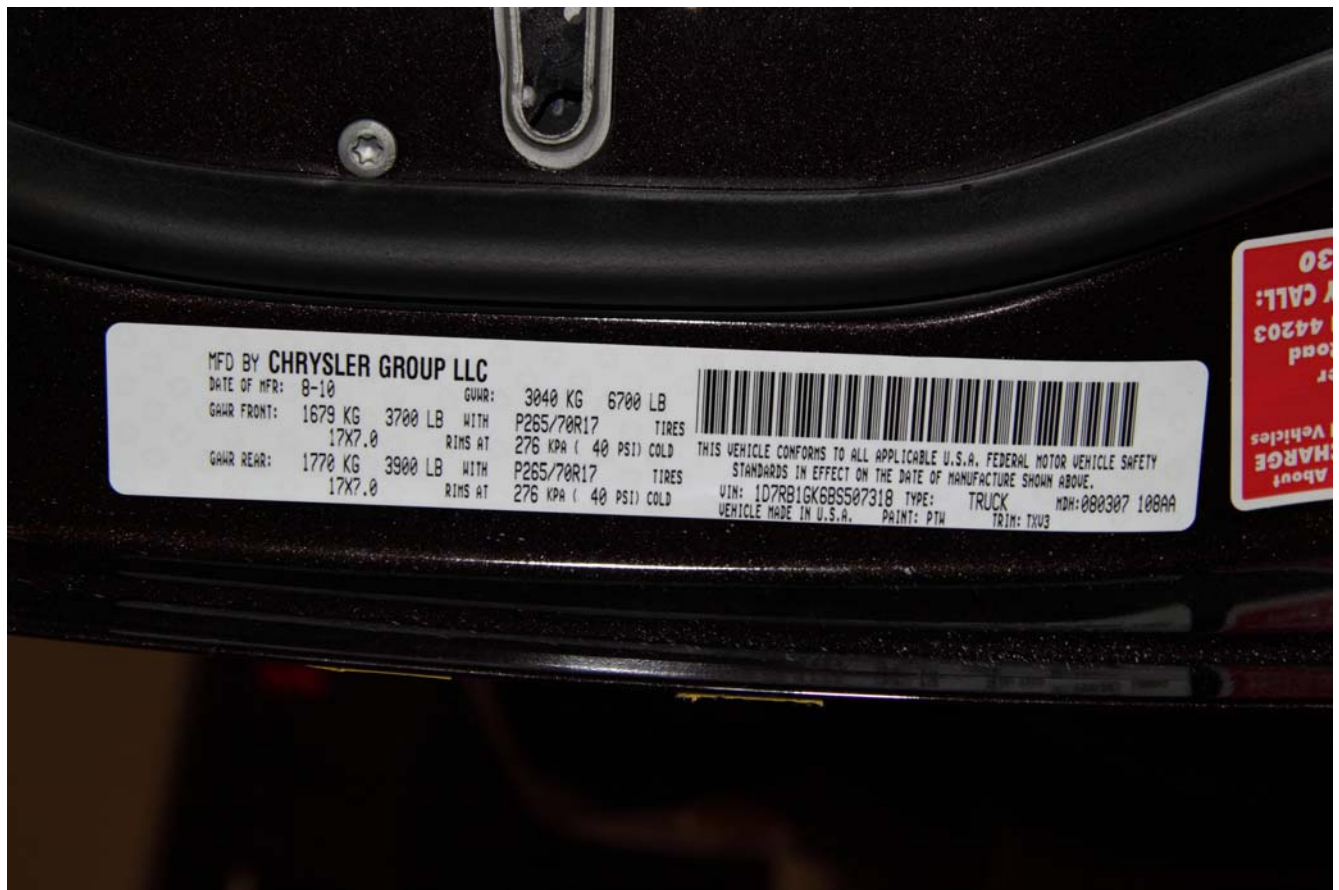
No. 050 – Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



No. 051 – Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



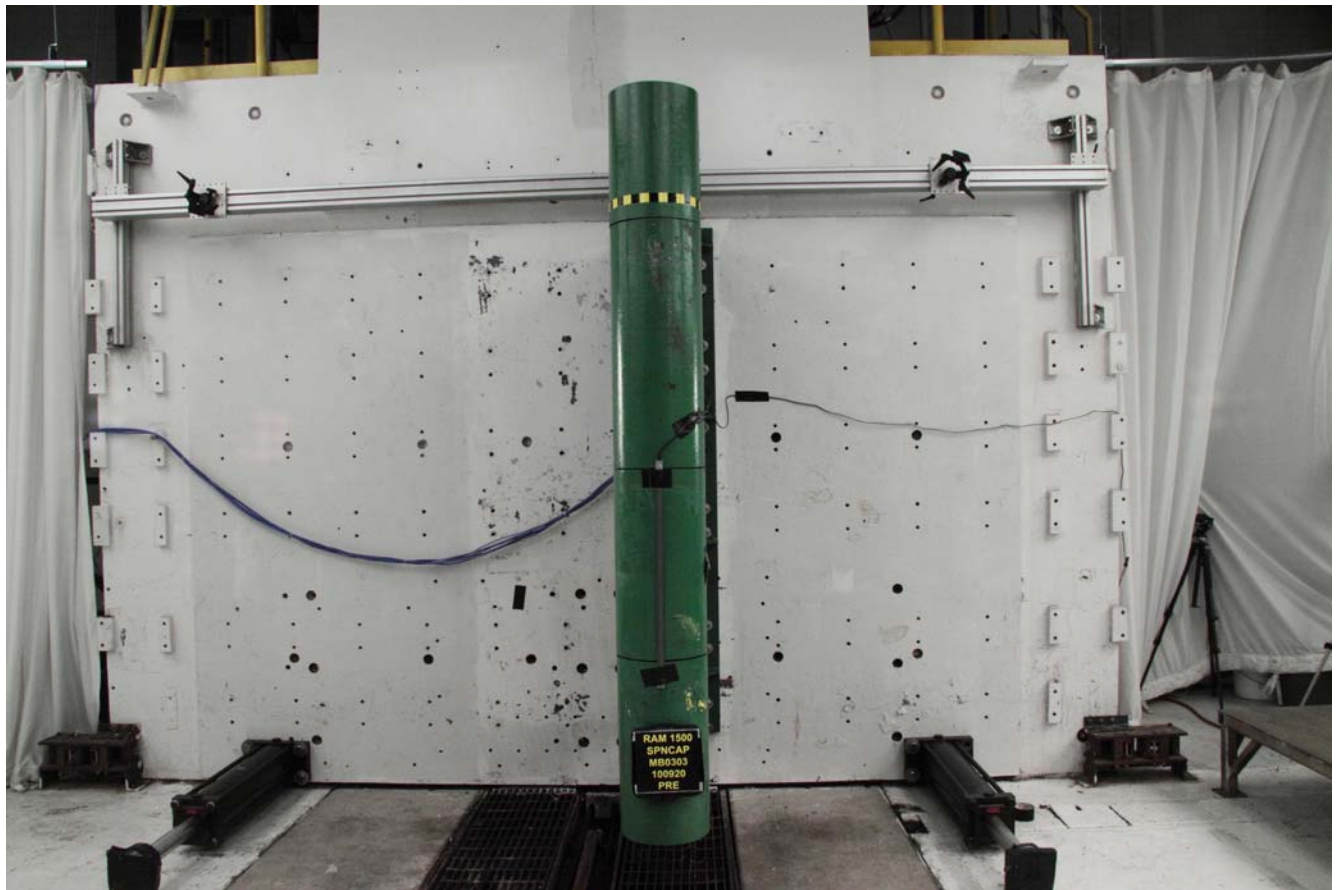
No. 052 – Post-Test View of Fuel Filler Cap or Fuel Filler Neck



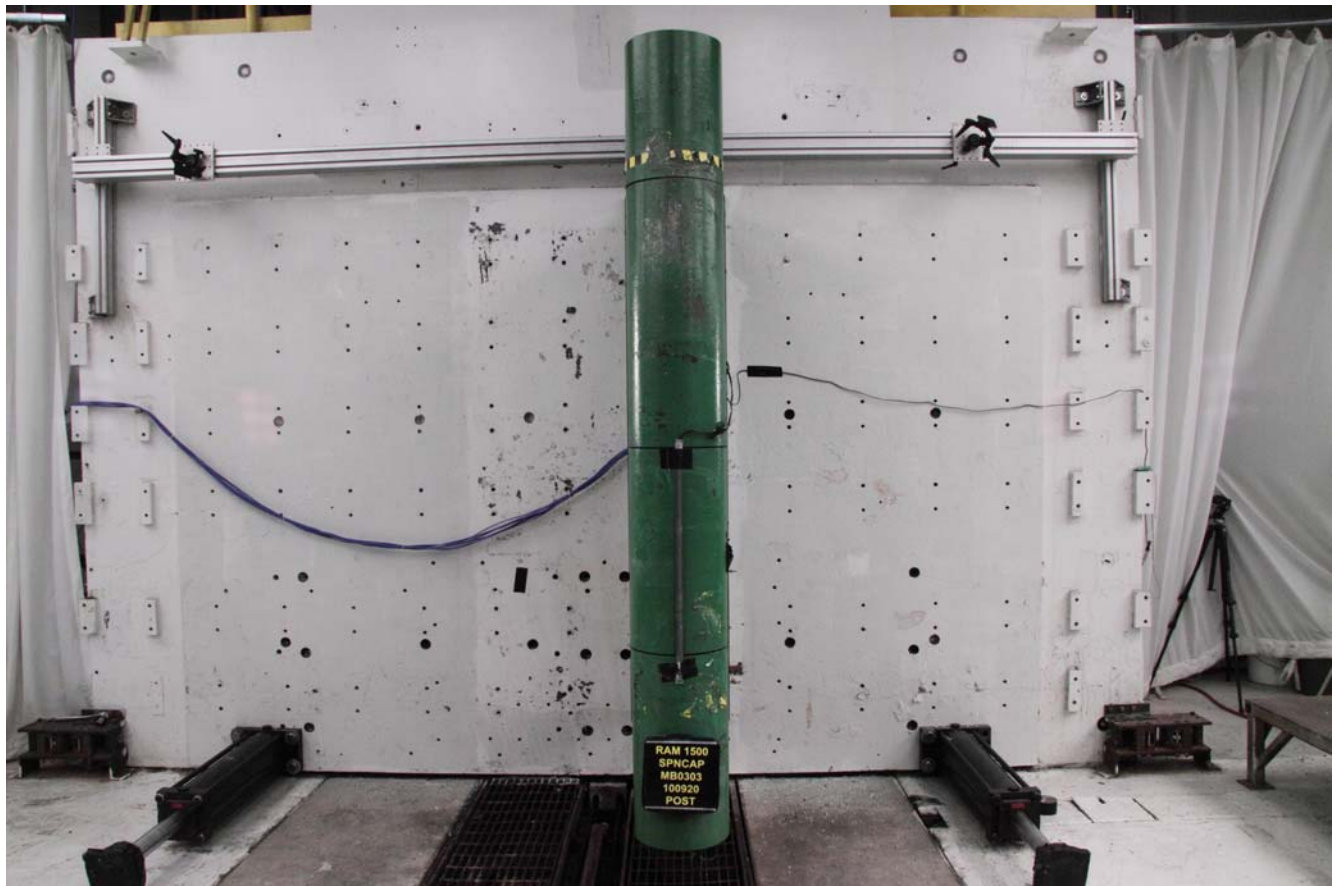
No. 053 – Close-Up View of Vehicle’s Certification Label



No. 054 – Close-Up View of Vehicle’s Tire Information Label



No. 055 – Pre-Test Pole Barrier Front View



No. 056 – Post-Test Pole Barrier Front View



No. 057 – Pre-Test Pole Barrier Side View



No. 058 – Post-Test Pole Barrier Side View



No. 059 – Pre-Test Ballast View

Intentionally Left Blank



No. 060 – Post-Test Primary Speed Trap Read-Out



No. 060a – Post-Test Redundant Speed Trap Read-Out



No. 061 – FMVSS No. 301 Rollover 0°



No. 062 – FMVSS No. 301 Rollover 90°



No. 063 – FMVSS No. 301 Rollover 180°



No. 064 – FMVSS No. 301 Rollover 270°



No. 065 – FMVSS No. 301 Rollover 360°



No. 066 – Impact Event



2011 MODEL YEAR RAM 1500 ST QUAD CAB 4X2

For more information visit: www.ramtrucks.com
or call 1-866-RAMINFO

Chrysler Group LLC

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

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

Base Price: \$24,665

DODGE RAM 1500 ST QUAD CAB 4X2
Exterior Color: Rugged Brown Pearl Coat Exterior Paint
Interior Color: Dark Slate / Medium Graystone Interior Colors
Engine: 3.7-Liter V6 Engine
Transmission: 4-Speed Automatic Transmission

STANDARD EQUIPMENT (UNLESS REPLACED BY OPTIONAL EQUIPMENT)

FUNCTIONAL/SAFETY FEATURES

26-Gallon Fuel Tank
Advanced Multistage Front Airbags
Supplemental Side-Curtain Front and Rear Airbags
Electronic Stability Control
Antilock 4-Wheel Disc Brakes
160-Amp Alternator
Sentry Key Theft Deterrent System
Power Locks
Power Accessory Delay
120-MPH Primary Speedometer
Tire Pressure Monitoring Warning Lamp
Auxiliary Transmission Oil Cooler
Variable Intermittent Windshield Wipers
Locking Tailgate

INTERIOR FEATURES

Air Conditioning
Media Center 130 CD/MP3
6 Speakers
Audio Jack Input for Mobile Devices
Rear Folding Seat
Power Windows w/ Front One-Touch Up & Down Feature
Rear Underseat Storage Compartment
Tilt Steering Column
12-Volt Auxiliary Power Outlet

EXTERIOR FEATURES

17-inch x 7.0-inch Steel Argent Wheels
P265/70R17 85W All Season Tires
Full-Size Spare Tire
Trailer Tow Wiring with 4-Pin Connector
7-Pin Wiring Harness

Bright Grille
Automatic Headlamps
Halogen Headlamps
Fold-Away Power Heated Mirrors
Tinted Glass Windows

OPTIONAL EQUIPMENT

Customer Preferred Package 22A
3.92 Rear Axle Ratio \$375
Anti-Spin Differential Rear Axle

DESTINATION CHARGE \$900

TOTAL PRICE: * \$25,940

WARRANTY COVERAGE

5-year or 100,000-mile Powertrain Limited Warranty.
3-year or 36,000-mile Basic Limited Warranty.
24-hour towing 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 Plant/Port of Entry: WARREN, MICHIGAN, U.S.A.

VIN: 10T-RB1GK68S-507318



SHIP TO: 20433 36

PROD MARTIN SUPERSTORE

3700 BARBER RD

NEPTON OH 44030-1011

SHIP TO: 41 20433

PROD MARTIN SUPERSTORE

3700 BARBER RD

NEPTON OH 44030-1011

THIS LABEL IS ADDED TO THIS VEHICLE TO COMPLY WITH FEDERAL LAW. THE LABEL CANNOT BE REMOVED OR ALTERED PRIOR TO DELIVERY TO THE CUSTOMER. PACKAGES.

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

EPA Fuel Economy Estimates

These estimates reflect new EPA methods beginning with 2008 models.

CITY MPG

14

Expected range for most drivers
11 to 17 MPG

HIGHWAY MPG

20

Expected range for most drivers
16 to 24 MPG

Estimated
Annual Fuel Cost
\$2,438

based on 15,000 miles
at \$2.60 per gallon

Combined Fuel Economy

This vehicle

16

10 22

All STANDARD PICKUPS

Your actual mileage will vary depending on how you drive and maintain your vehicle.

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

GOVERNMENT SAFETY RATINGS

Frontal Crash Driver Passenger Not Rated Not Rated

Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.

Side Crash Front seat Rear seat Not Rated Not Rated

Star ratings based on the risk of injury in a side impact.

Rollover ★★★★★

Star ratings 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: 70 %

MAJOR SOURCES OF FOREIGN PARTS

CONTENT:

MEXICO: 15 %

NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:

FINAL ASSEMBLY POINT:

WARREN, MICHIGAN, U.S.A.

COUNTRY OF ORIGIN:

ENGINE: UNITED STATES

TRANSMISSION: UNITED STATES

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

No. 067 – Monroney Label

15

Rear Head Restraints

The two outboard seat are equipped with adjustable head restraints. To raise the head restraint, pull upward on the head restraint. To lower the head restraint, press the adjustment button, located on the base of the head restraint, and push downward on the head restraint.



Adjustment Button

Front Head Restraints

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



Adjustment Button

16

NOTE:

- The rear center head restraint (Crew Cab only) has only one adjustment position that is used to aid in the routing of a tether. Refer to "Occupant Restraints" in "Things to Know Before Starting Your Vehicle" for further information.
- The head restraints should only be removed by qualified technicians, for service purposes only. If either of the head restraints require removal, see your authorized dealer.

No. 068 – Head Restraint Use and Adjustment Information from Vehicle Manual

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

Data Plot	Driver Dummy Instrumentation Plots	Page
B-1	Driver Head Primary X-Axis Acceleration	B-4
B-1	Driver Head Primary Y-Axis Acceleration	B-4
B-1	Driver Head Primary Z-Axis Acceleration	B-4
B-1	Driver Head Primary Resultant Acceleration	B-4
B-2	Driver Lower Spine X-Axis Acceleration	B-5
B-2	Driver Lower Spine Y-Axis Acceleration	B-5
B-2	Driver Lower Spine Z-Axis Acceleration	B-5
B-2	Driver Lower Spine Resultant Acceleration	B-5
B-3	Driver Iliac Wing Y-Axis Force	B-6
B-3	Driver Acetabulum Y-Axis Force	B-6
B-3	Driver Total Pelvis Y-Axis Force	B-6

The following dummy and vehicle response data can be found in the Research and Development section of the NHTSA website at: www.nhtsa.dot.gov.

Additional Driver Dummy Instrumentation Data

Driver Head Redundant X-Axis Acceleration
 Driver Head Redundant Y-Axis Acceleration
 Driver Head Redundant Z-Axis Acceleration
 Driver Upper Thorax Rib Y-Axis Deflection
 Driver Middle Thorax Rib Y-Axis Deflection
 Driver Lower Thorax Rib Y-Axis Deflection
 Driver Upper Abdomen Rib Y-Axis Deflection
 Driver Lower Abdomen Rib Y-Axis Deflection
 Driver Shoulder Contact Switch
 Driver Torso Contact Switch
 Driver Pelvis Contact Switch

Vehicle Instrumentation Data

Vehicle Center of Gravity X-Axis Acceleration
Vehicle Center of Gravity Y-Axis Acceleration
Vehicle Center of Gravity Z-Axis Acceleration
Vehicle Center of Gravity Angular Rate About X axis
Vehicle Center of Gravity Angular Rate About Y axis
Vehicle Center of Gravity Angular Rate About Z axis
Left Floor Sill Y-Axis Acceleration
Left A-Pillar Sill Y-Axis Acceleration
Left Lower A-Pillar Y-Axis Acceleration
Left Mid A-Pillar Y-Axis Acceleration
Left B-Pillar Sill Y-Axis Acceleration
Left Lower B-Pillar Y-Axis Acceleration
Left Mid B-Pillar Y-Axis Acceleration
Driver Seat Track at Dummy H-Point Y-Axis Acceleration
Engine Top X-Axis Acceleration
Engine Top Y-Axis Acceleration
Firewall Center Y-Axis Acceleration
Right Roof at Vertical Impact Reference Line Y-Axis Acceleration
Right Sill at Vertical Impact Reference Line Y-Axis Accelerations
Rear Floorpan Behind Rear Axle at Centerline X-Axis Acceleration
Rear Floorpan Behind Rear Axle at Centerline Y-Axis Acceleration
Driver Side Airbag Timing
Driver Side Curtain Airbag Timing

Pole Instrumentation Data

Load Cell Pole Barrier #1 Y-Axis Force
Load Cell Pole Barrier #2 Y-Axis Force
Load Cell Pole Barrier #3 Y-Axis Force
Load Cell Pole Barrier #4 Y-Axis Force
Load Cell Pole Barrier #5 Y-Axis Force
Load Cell Pole Barrier #6 Y-Axis Force
Load Cell Pole Barrier #7 Y-Axis Force
Load Cell Pole Barrier #8 Y-Axis Force

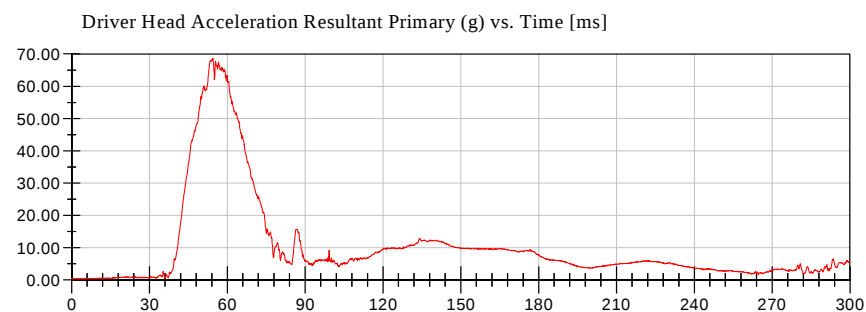
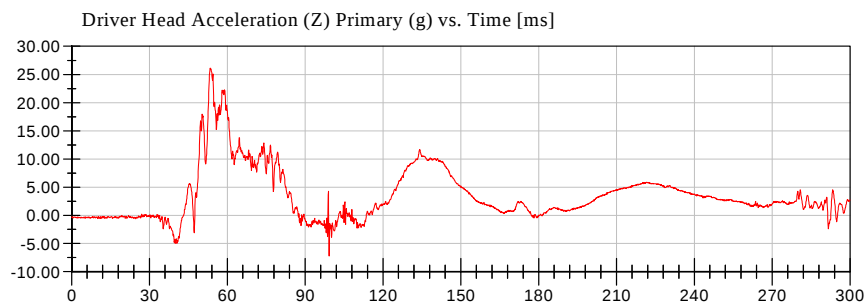
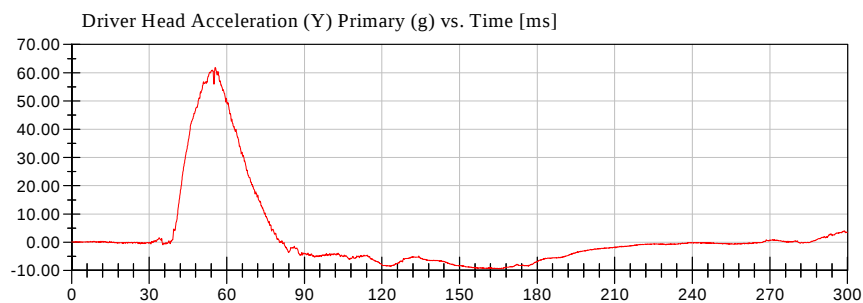
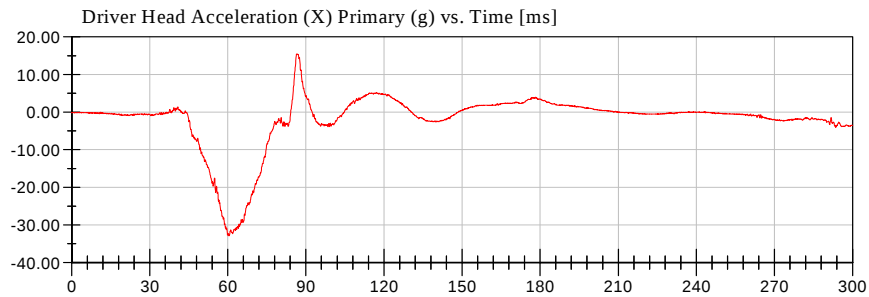
NHTSA

Test Lab: CTF

Test Number: 100920 (MB0303)

Position #1 SID II's Dummy (305)

Test Date: 09/20/2010



NHTSA

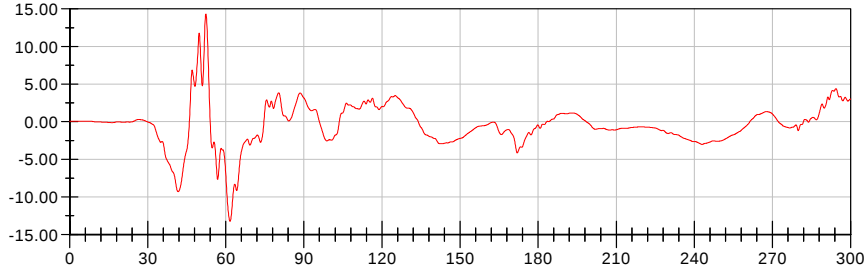
Test Lab: CTF

Test Number: 100920 (MB0303)

Position #1 SID II's Dummy (305)

Test Date: 09/20/2010

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



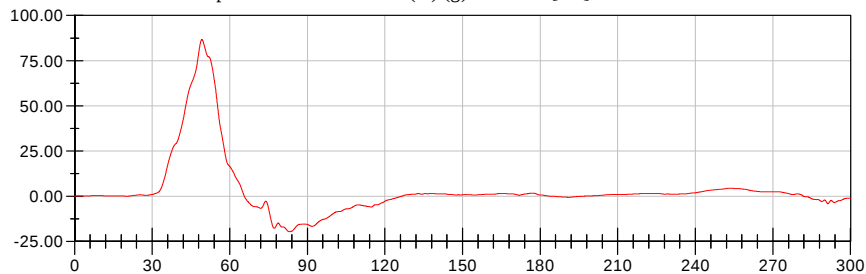
<Max>

14.33 g at 52.40 ms

<Min>

-13.24 g at 61.68 ms

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



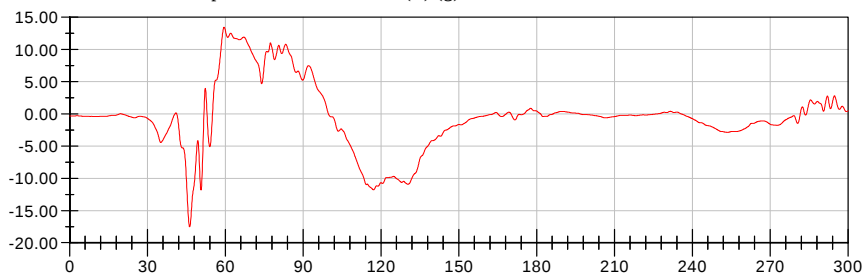
<Max>

86.69 g at 49.20 ms

<Min>

-19.72 g at 83.04 ms

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



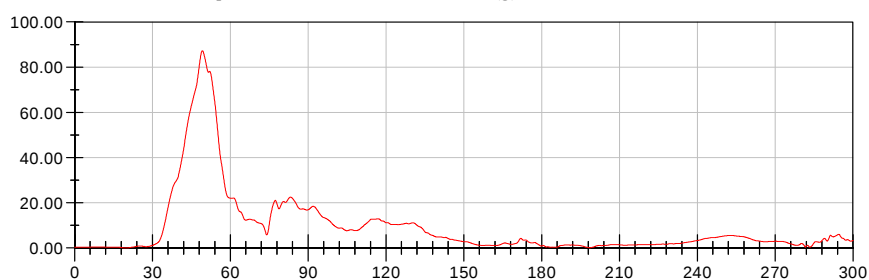
<Max>

13.47 g at 59.52 ms

<Min>

-17.54 g at 46.24 ms

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



<Max>

87.25 g at 49.20 ms

<Min>

0.02 g at 19.28 ms



NHTSA

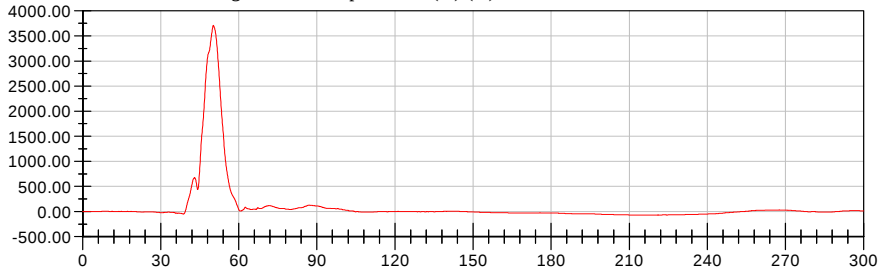
Test Lab: CTF

Test Number: 100920 (MB0303)

Position #1 SID IIs Dummy (305)

Test Date: 09/20/2010

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



<Max>

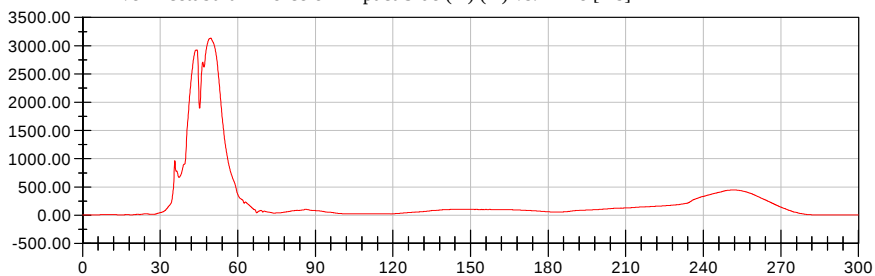
3,708.25 N at 50.24 ms

<Min>

-72.02 N at 213.60 ms

CFC_600

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



<Max>

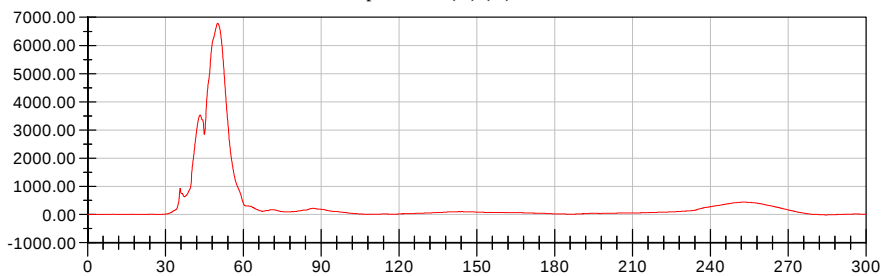
3,134.38 N at 49.60 ms

<Min>

-0.23 N at 3.20 ms

CFC_600

Driver Total Pelvis Force on Impact Side (Y) (N) vs. Time [ms]



<Max>

6,791.83 N at 50.16 ms

<Min>

-12.93 N at 284.80 ms

CFC_600



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Pre-Test Dummy Calibration

S/N 305

Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

Test Date: 8/31/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	116.8 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-2.8 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

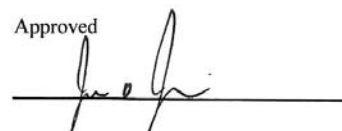
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 09:04:02 229

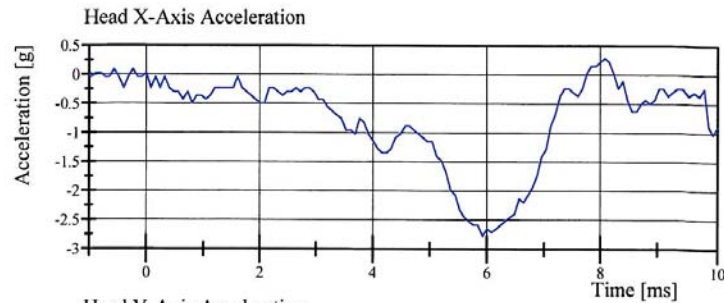


Transportation Research Center Inc.

Left Lateral Head Drop

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

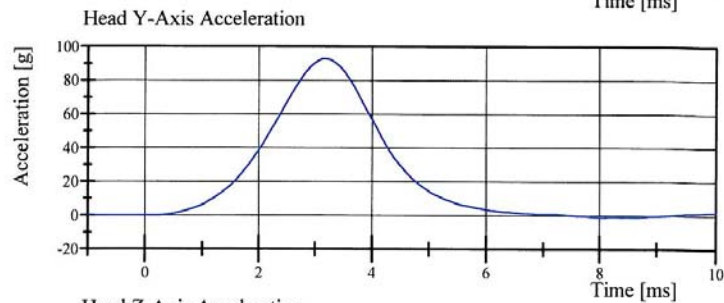
Test Date: 8/31/2010



Filter Class: CFC_1000

Max: 0.3 gn at 8.1 ms

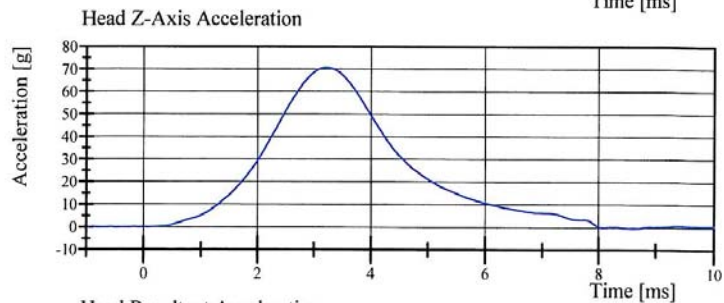
Min: -2.8 gn at 5.9 ms



Filter Class: CFC_1000

Max: 92.9 gn at 3.2 ms

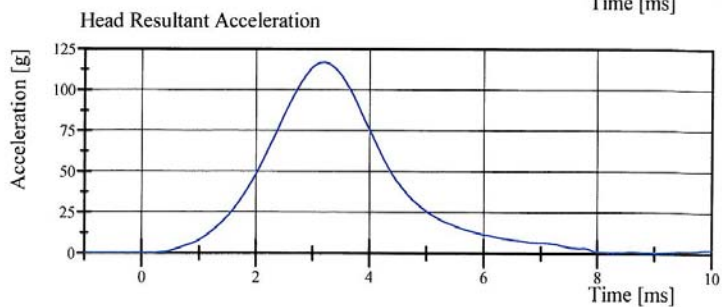
Min: -1.1 gn at 8.0 ms



Filter Class: CFC_1000

Max: 70.8 gn at 3.2 ms

Min: -0.4 gn at 8.6 ms



Filter Class: CFC_1000

Max: 116.8 gn at 3.2 ms

Min: 0.0 gn at -0.1 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 09:04:18 229



Transportation Research Center Inc.

Left Lateral Neck

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

Test Date: 8/31/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.588 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.210 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.479 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.789 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.816 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.979 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-71.6 deg	Yes
Time of Peak	50 - 70 ms	59.8 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	42.1 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	106.6 ms	Yes

Test meets specifications.

Comments:

Technician


Approved


Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 10:51:12 653

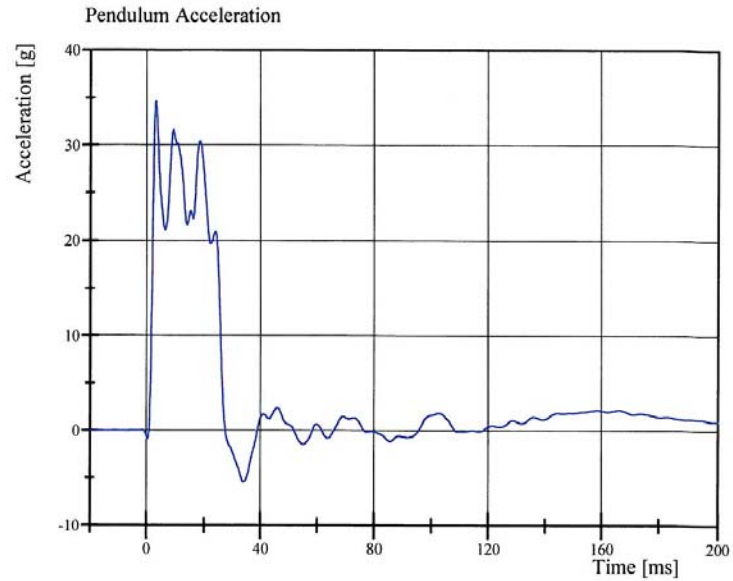


Transportation Research Center Inc.

Left Lateral Neck

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

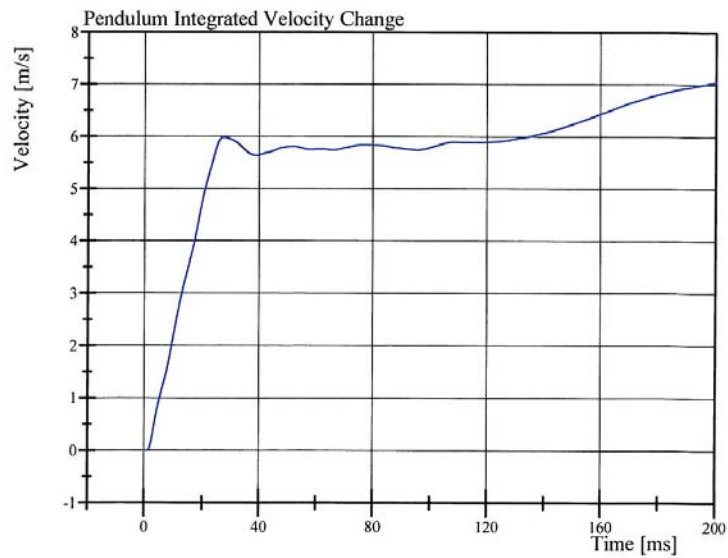
Test Date: 8/31/2010



Filter Class: CFC_180

Max: 34.6 gn at 3.1 ms

Min: -5.4 gn at 33.8 ms



Filter Class: CFC_180

Max: 7.0 m/s at 200.0 ms

Min: -0.0 m/s at 0.8 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 10:51:23 653

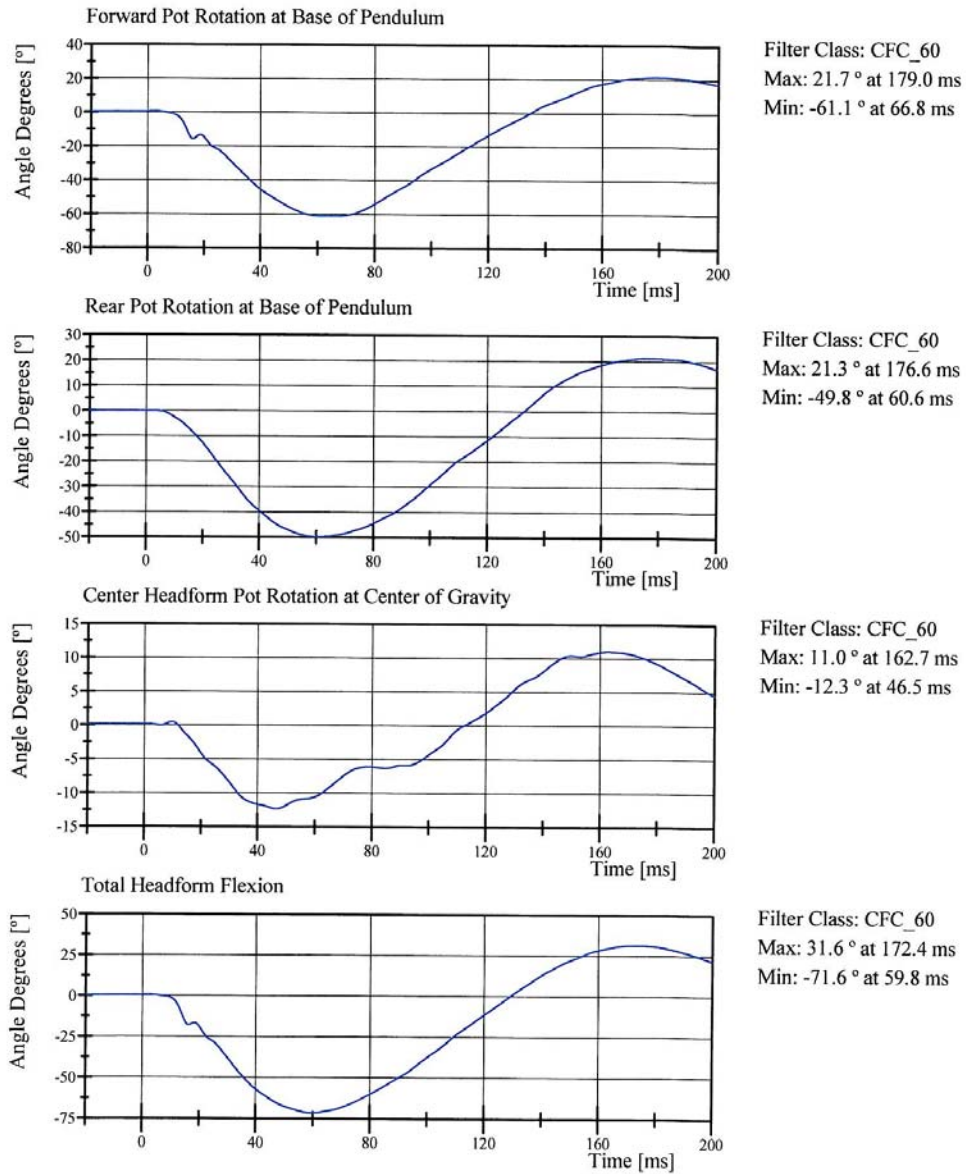


Transportation Research Center Inc.

Left Lateral Neck

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

Test Date: 8/31/2010



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 10:51:25 653

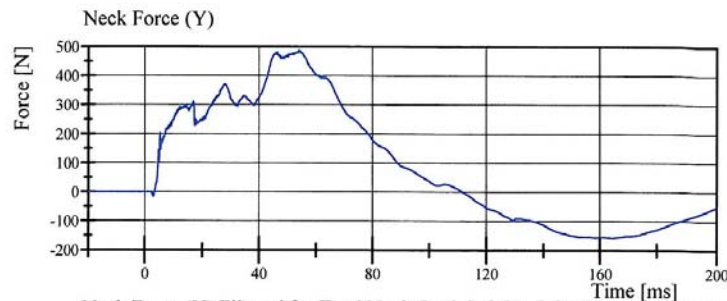


Transportation Research Center Inc.

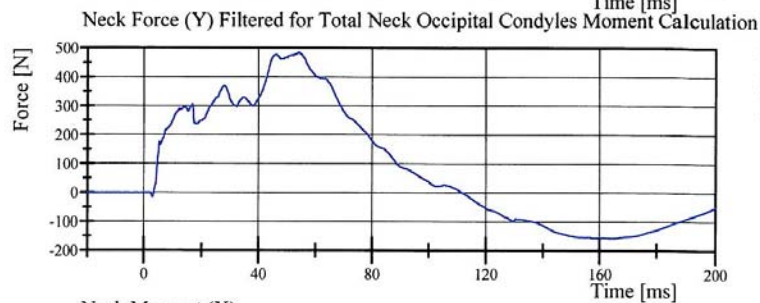
Left Lateral Neck

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

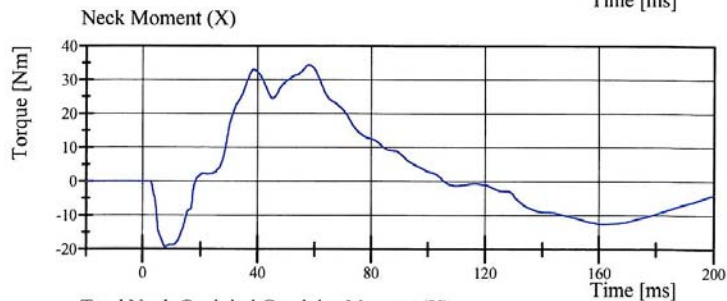
Test Date: 8/31/2010



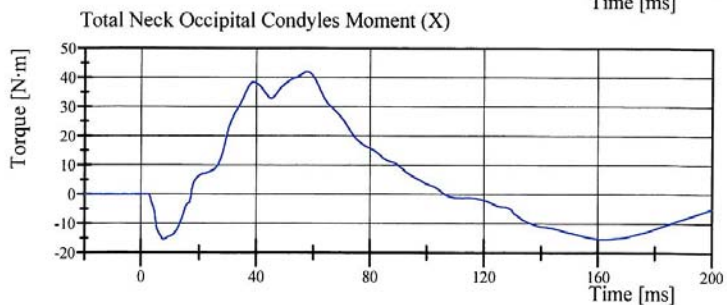
Filter Class: CFC_1000
Max: 487.7 N at 53.9 ms
Min: -157.5 N at 164.1 ms



Filter Class: CFC_600
Max: 485.3 N at 54.0 ms
Min: -157.0 N at 164.6 ms



Filter Class: CFC_600
Max: 34.4 Nm at 58.0 ms
Min: -19.3 Nm at 7.7 ms



Filter Class: CFC_600
Max: 42.1 N·m at 57.8 ms
Min: -15.5 N·m at 7.6 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 10:51:27 653



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

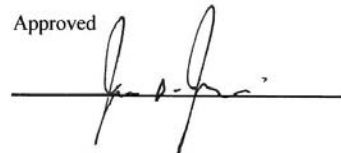
Test Date: 8/30/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.9 g	Yes
Shoulder Displacement	28 - 37 mm	29.8 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	20.4 g	Yes

Test meets specifications.

Comments:

Technician


Approved


Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.30.2010 14:06:16 809

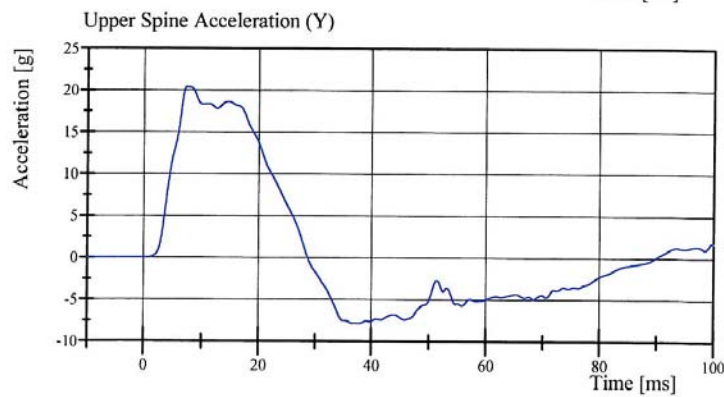
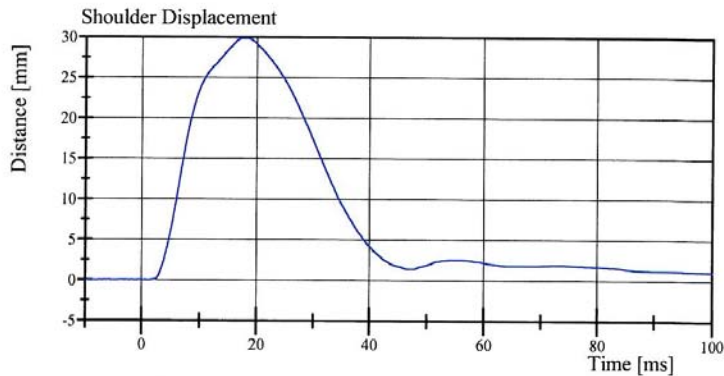
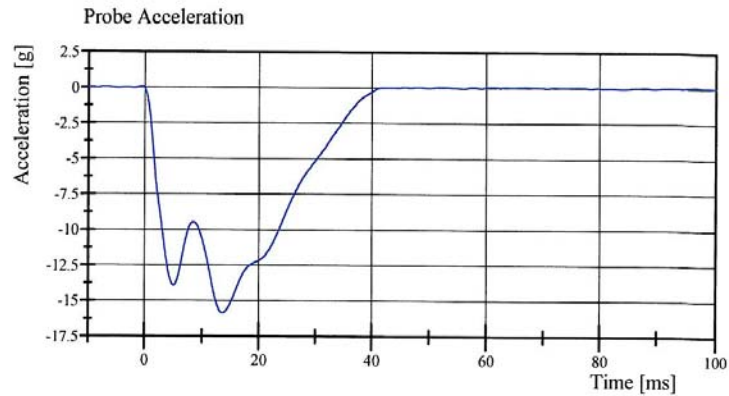


Transportation Research Center Inc.

Left Lateral Shoulder

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

Test Date: 8/30/2010



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.30.2010 14:06:23 809



Transportation Research Center Inc.

Left Lateral Thorax with Arm

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-10

Test Date: 9/1/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.690 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-34.1 g	Yes
Shoulder Displacement	31 - 40 mm	35.2 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	26.3 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	30.4 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.2 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	39.3 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	36.5 g	Yes

Test meets specifications.

Comments:

Technician



Approved



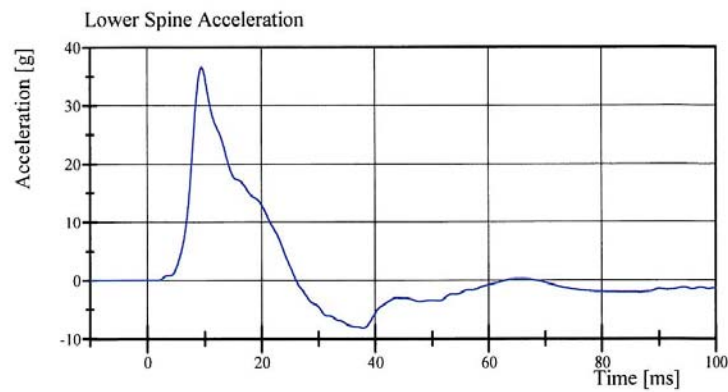
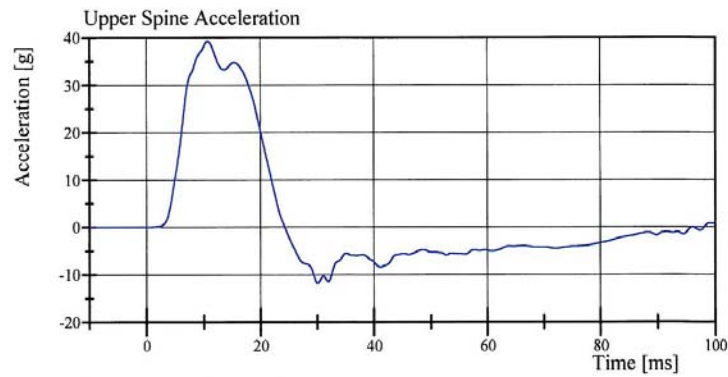
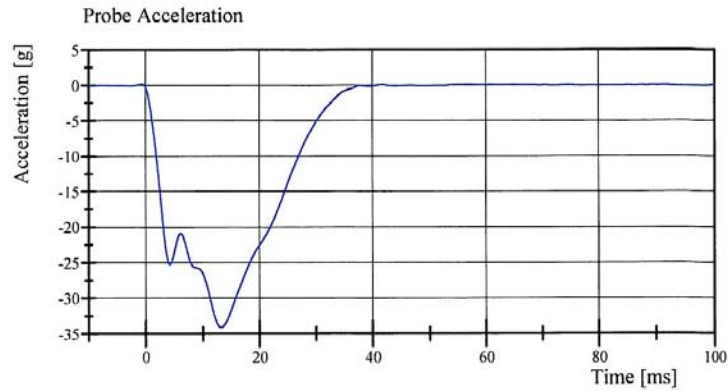
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.01.2010 11:31:21 601



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-10
Test Date: 9/1/2010



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.01.2010 11:32:11 601

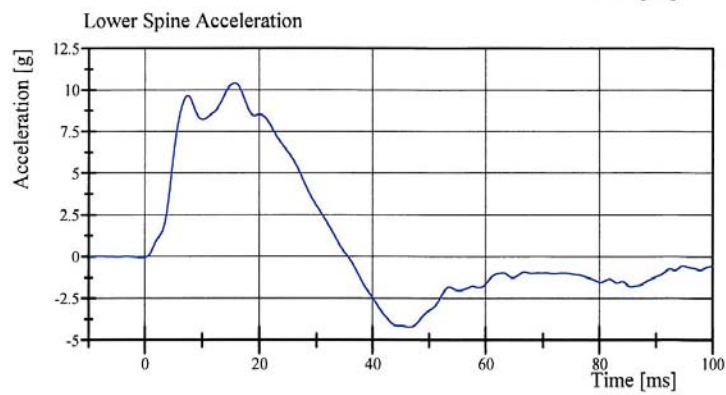
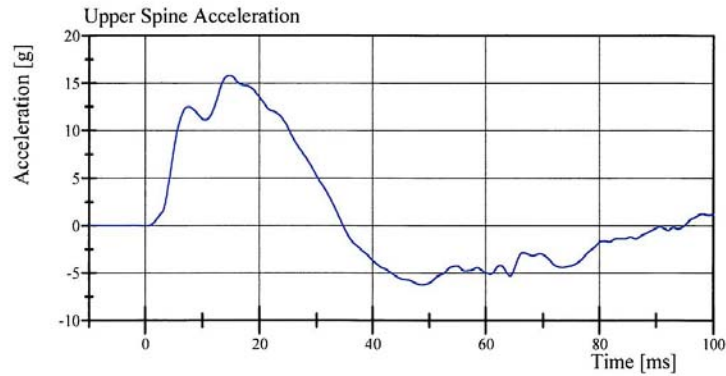
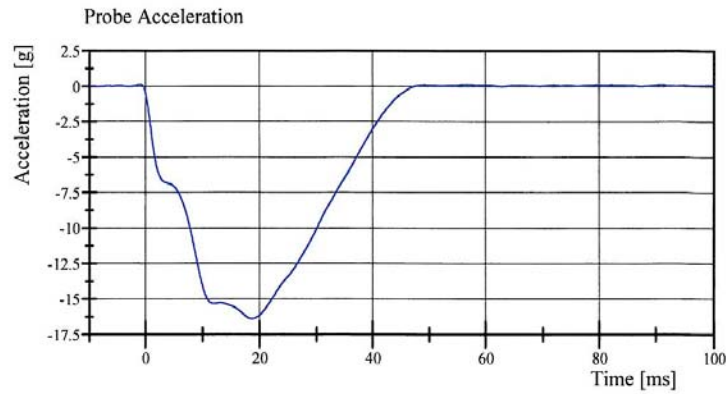


Transportation Research Center Inc.

Left Lateral Thorax without Arm

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-2

Test Date: 9/1/2010



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.01.2010 12:23:45 807



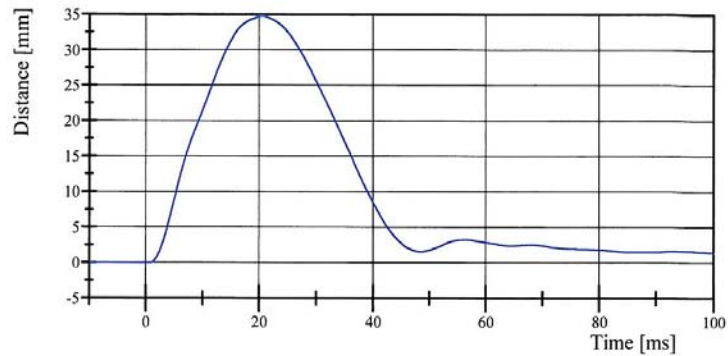
Transportation Research Center Inc.

Left Lateral Thorax without Arm

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-2

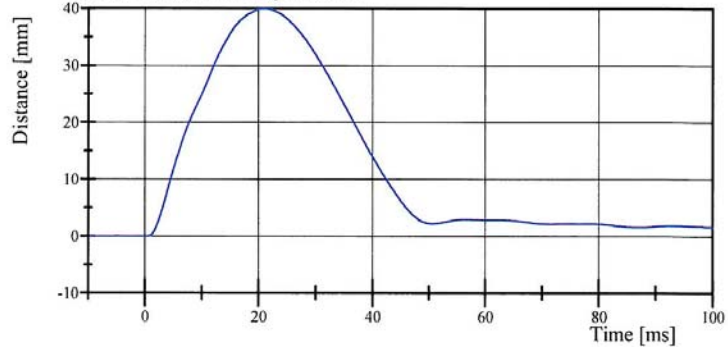
Test Date: 9/1/2010

Upper Thorax Rib Displacement



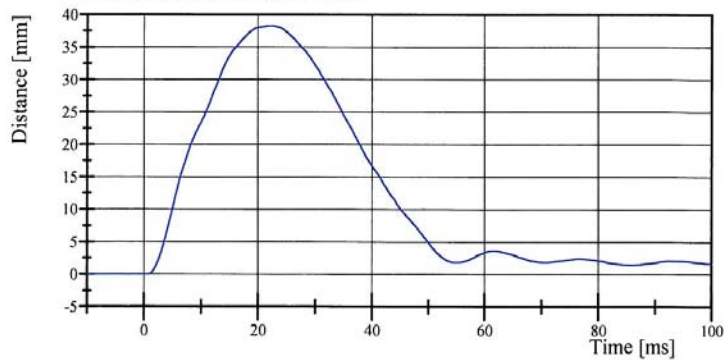
Filter Class: CFC_600
Max: 34.8 mm at 20.7 ms
Min: -0.0 mm at 0.8 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 40.0 mm at 21.0 ms
Min: -0.0 mm at 0.6 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 38.3 mm at 22.4 ms
Min: -0.0 mm at -1.4 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.01.2010 12:23:45 807



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-2

Test Date: 8/31/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-15.0 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	39.1 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	36.7 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	12.98 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 09:19:10 631

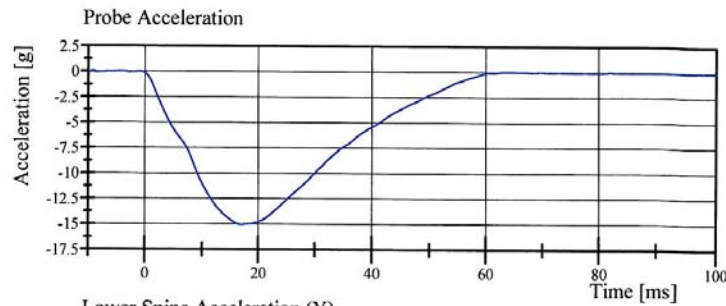


Transportation Research Center Inc.

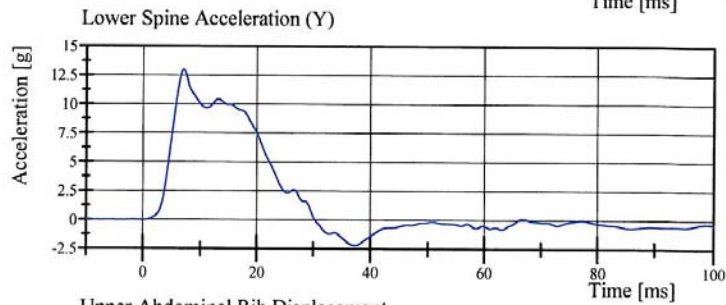
Left Lateral Abdomen

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-2

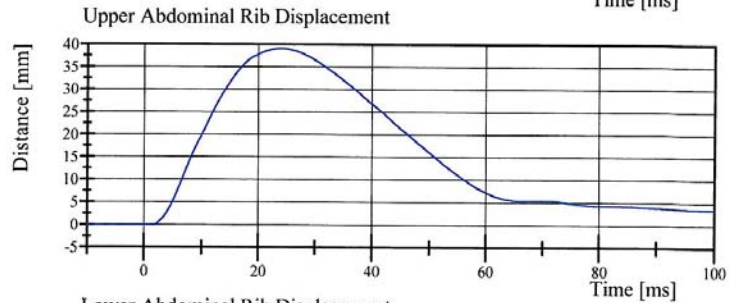
Test Date: 8/31/2010



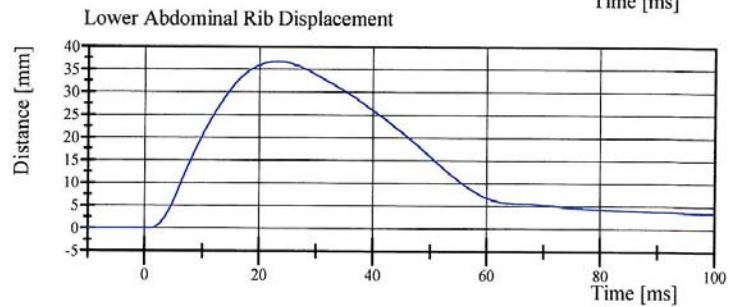
Filter Class: CFC_180
Max: 0.1 gn at -4.2 ms
Min: -15.0 gn at 16.9 ms



Filter Class: CFC_180
Max: 13.0 gn at 7.0 ms
Min: -2.2 gn at 37.4 ms



Filter Class: CFC_600
Max: 39.1 mm at 23.8 ms
Min: -0.0 mm at 1.7 ms



Filter Class: CFC_600
Max: 36.7 mm at 23.3 ms
Min: -0.0 mm at 1.2 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 09:19:25 631



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-3

Test Date: 9/1/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.65 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-41.60 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	37.8 g	Yes
Acetabulum Force	3,600 - 4,300 N	4,109.6 N	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.01.2010 09:02:40 432

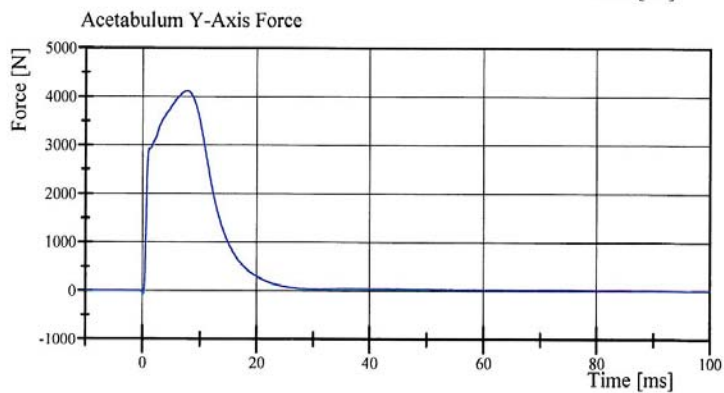
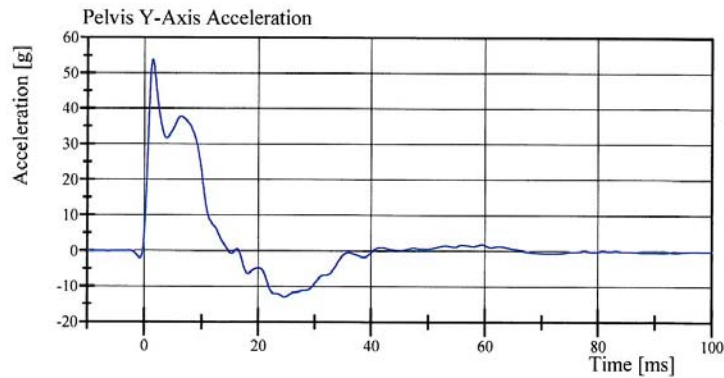
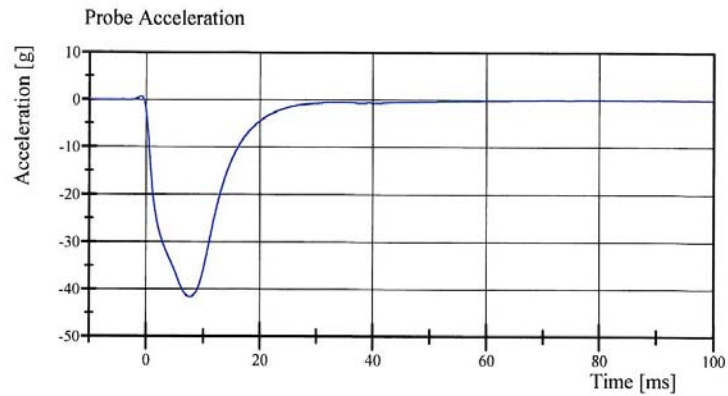


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-3

Test Date: 9/1/2010



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.01.2010 09:02:52 432



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

Test Date: 8/31/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.38 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-38.5 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	32.7 g	Yes
Iliac Force	4,100 - 5,100 N	4,495.5 N	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 14:21:15 642

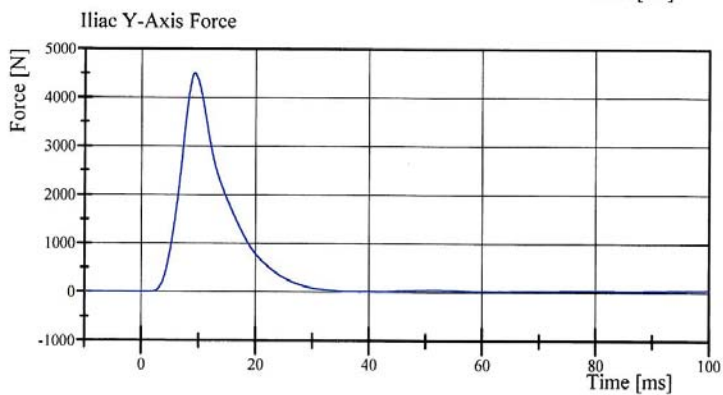
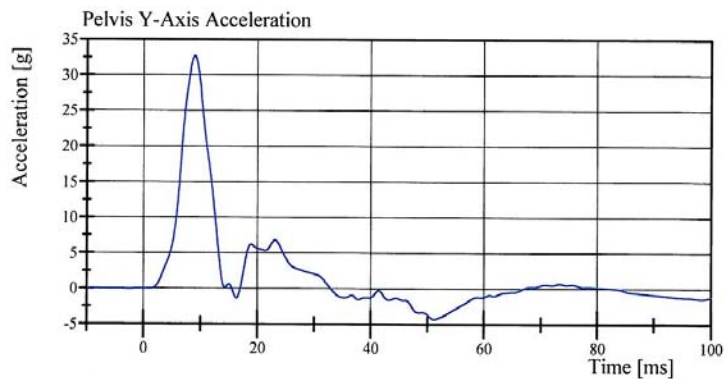
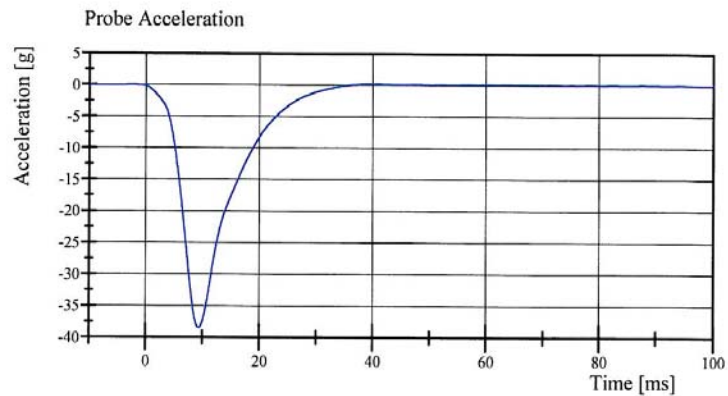


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 2-1

Test Date: 8/31/2010



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

08.31.2010 14:21:23 642



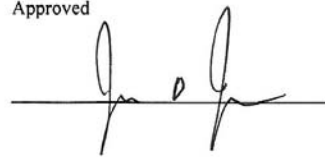
Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. 305 Calibration No.02
Date: 9/01/10

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	775	Yes
B	Shoulder Pivot Height	437.0 - 453.0	439	Yes
C	H-Point Height	79.0 - 89.0	83	Yes
D	H-Point from Seat Back	141.0 - 151.0	145	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	105	Yes
F	Thigh Clearance	119.0 - 135.0	128	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	183	Yes
J	Head Circumference	541.0 - 551.0	543	Yes
K	Buttock to Knee Length	514.0 - 540.0	533	Yes
L	Popliteal Height	343.0 - 369.0	354	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	402	Yes
N	Buttock Popliteal Length	416.0 - 442.0	430	Yes
O	Chest Depth without Jacket	195.0 - 211.0	205	Yes
P	Foot Length (right)	216.0 - 232.0	220	Yes
P	Foot Length (left)	216.0 - 232.0	220	Yes
Q	Hip Breadth	313.0 - 323.0	313	Yes
R	Arm Length	249.0 - 259.0	253	Yes
S	Knee Joint to seat Back	478.0 - 493.0	480	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	350	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	865	Yes
Z	Waist Circumference	761.0 - 791.0	780	Yes

Technician



Approved




Revised 9/29/2005

Post-Test Dummy Calibration

S/N 305

Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	117.2 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-2.4 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

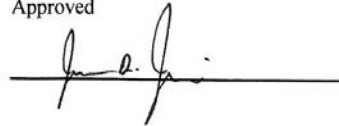
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 09:00:25 233

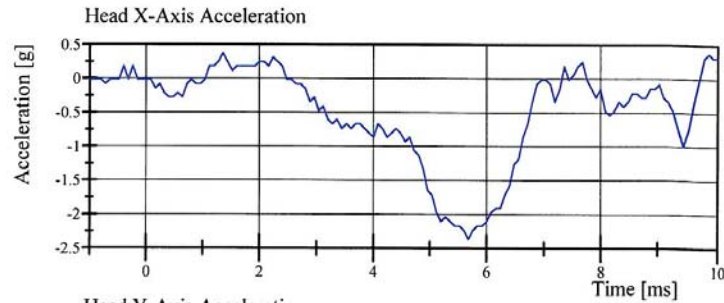


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

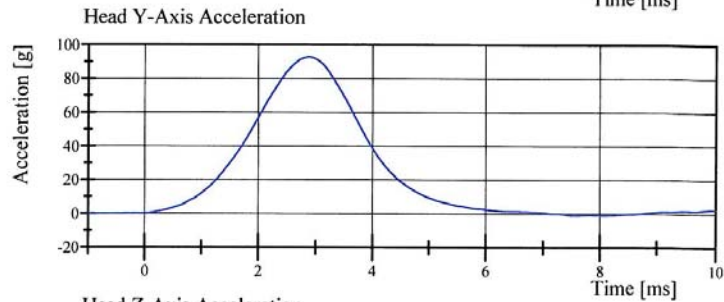
Test Date: 9/22/2010



Filter Class: CFC_1000

Max: 0.4 gn at 1.4 ms

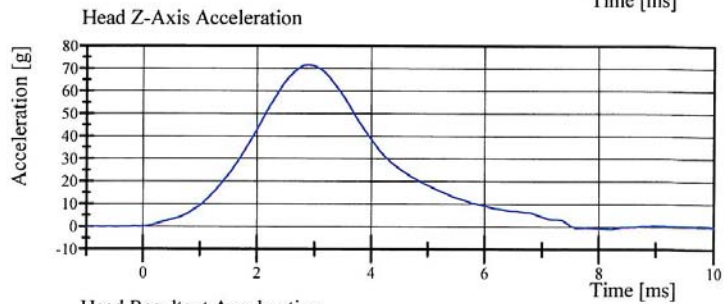
Min: -2.4 gn at 5.7 ms



Filter Class: CFC_1000

Max: 92.9 gn at 2.9 ms

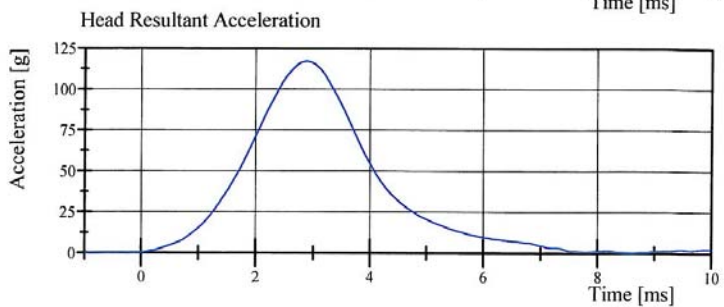
Min: -1.1 gn at 7.5 ms



Filter Class: CFC_1000

Max: 71.5 gn at 2.9 ms

Min: -0.9 gn at 8.2 ms



Filter Class: CFC_1000

Max: 117.2 gn at 2.9 ms

Min: 0.0 gn at -0.8 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 09:00:32 233



Transportation Research Center Inc.

Left Lateral Neck

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.579 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.538 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.649 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.794 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.773 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.932 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-72.6 deg	Yes
Time of Peak	50 - 70 ms	57.7 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	41.3 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	109.1 ms	Yes

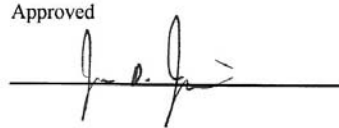
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 10:33:11 668

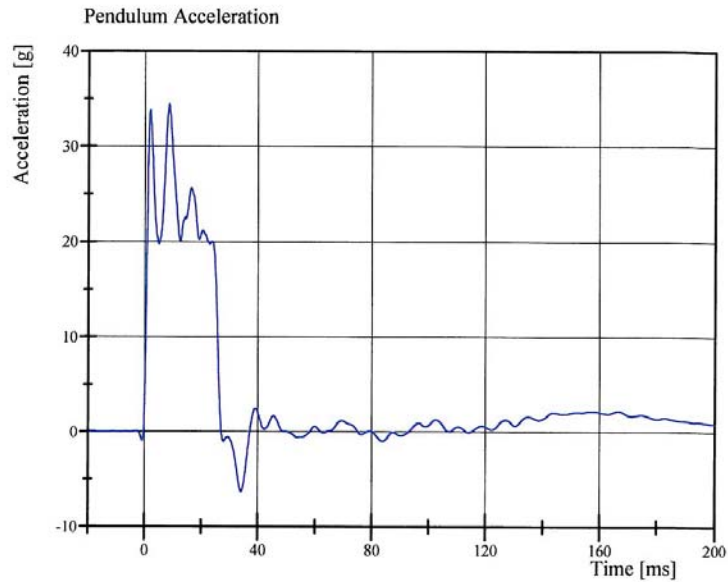


Transportation Research Center Inc.

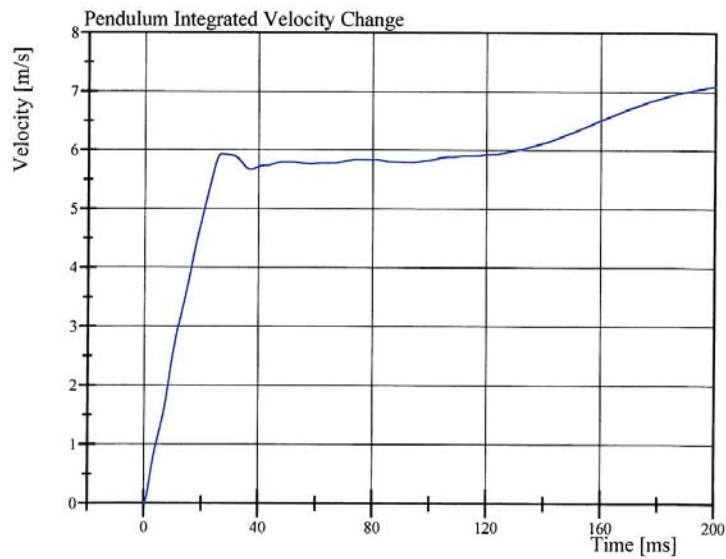
Left Lateral Neck

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/22/2010



Filter Class: CFC_180
Max: 34.4 gn at 8.6 ms
Min: -6.3 gn at 34.1 ms



Filter Class: CFC_180
Max: 7.1 m/s at 200.0 ms
Min: 0.0 m/s at 0.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 10:33:20 668

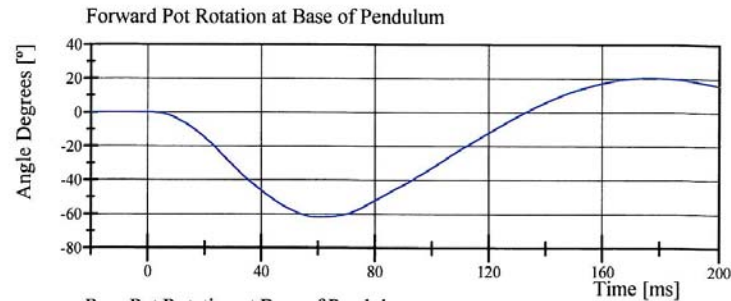


Transportation Research Center Inc.

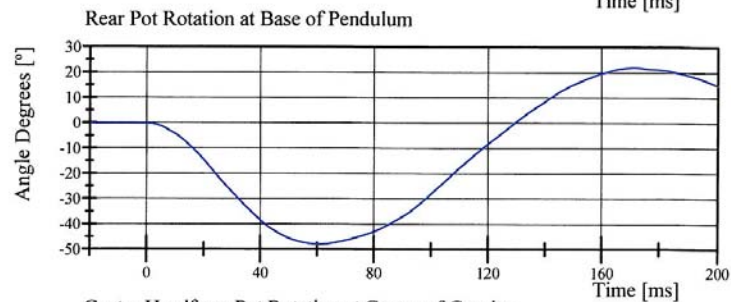
Left Lateral Neck

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

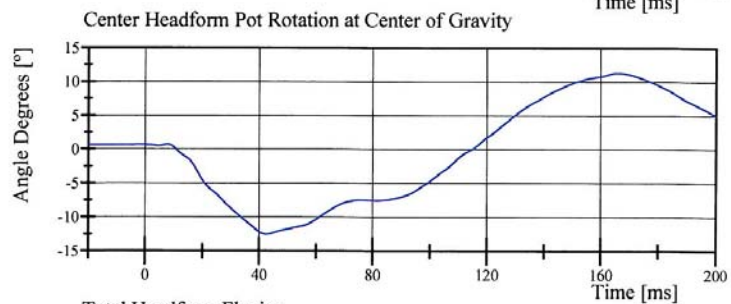
Test Date: 9/22/2010



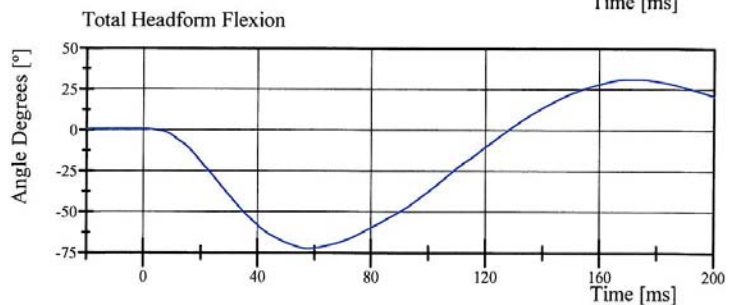
Filter Class: CFC_60
Max: 20.6 ° at 176.4 ms
Min: -61.9 ° at 61.2 ms



Filter Class: CFC_60
Max: 21.9 ° at 171.6 ms
Min: -48.0 ° at 61.3 ms



Filter Class: CFC_60
Max: 11.3 ° at 166.1 ms
Min: -12.6 ° at 42.6 ms



Filter Class: CFC_60
Max: 31.0 ° at 172.6 ms
Min: -72.6 ° at 57.7 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 10:33:20 668

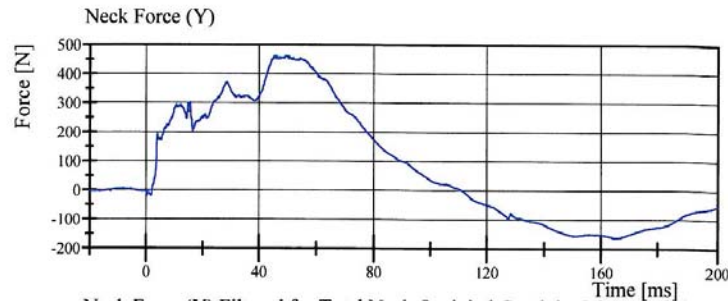


Transportation Research Center Inc.

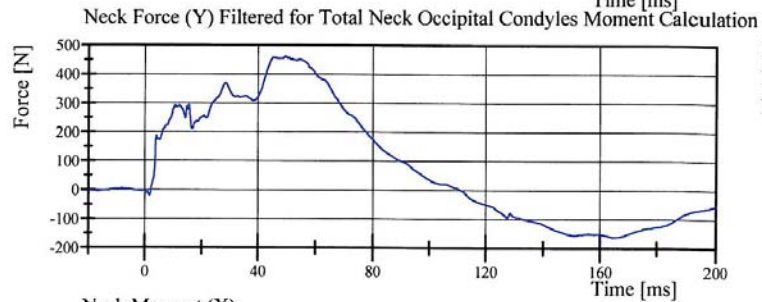
Left Lateral Neck

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

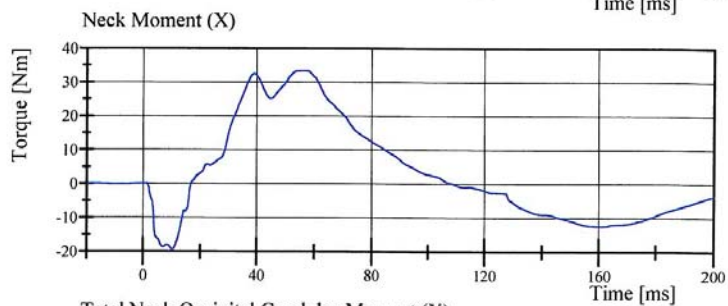
Test Date: 9/22/2010



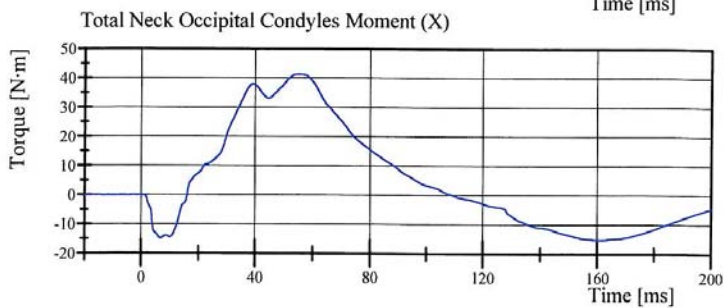
Filter Class: CFC_1000
Max: 461.9 N at 49.6 ms
Min: -162.9 N at 164.3 ms



Filter Class: CFC_600
Max: 461.9 N at 49.6 ms
Min: -162.3 N at 164.2 ms



Filter Class: CFC_600
Max: 33.4 Nm at 56.6 ms
Min: -19.4 Nm at 10.2 ms



Filter Class: CFC_600
Max: 41.3 N·m at 55.2 ms
Min: -15.3 N·m at 161.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 10:33:21 668



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-2

Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.34 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-16.4 g	Yes
Shoulder Displacement	28 - 37 mm	31.9 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.8 g	Yes

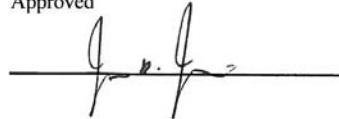
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:24:35 814

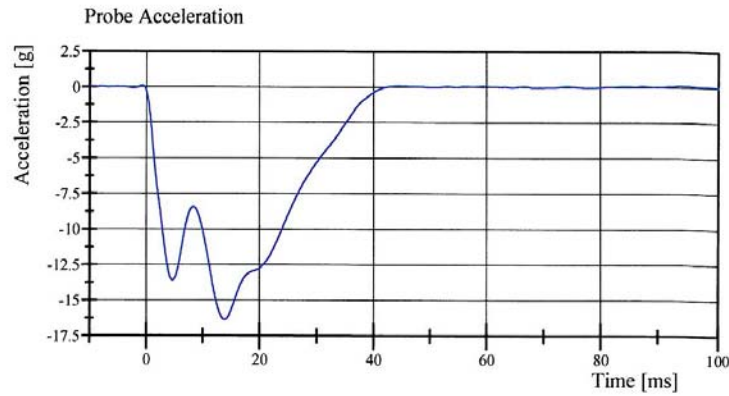


Transportation Research Center Inc.

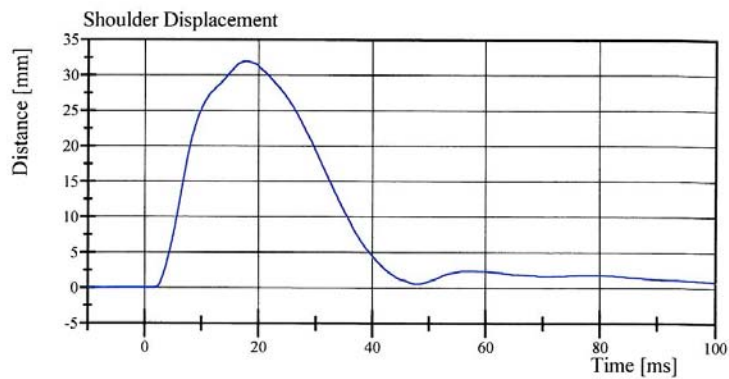
Left Lateral Shoulder

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-2

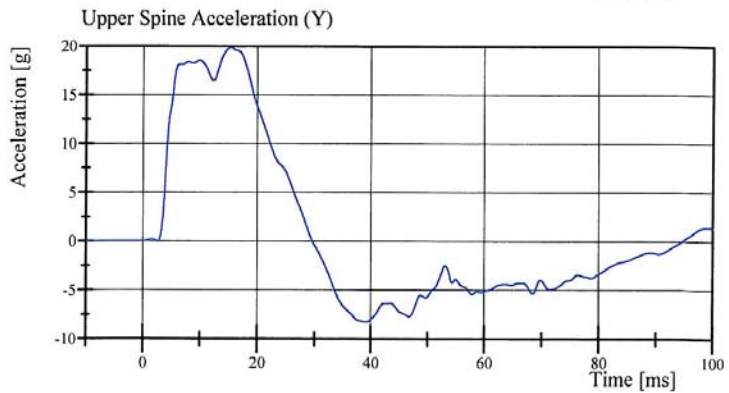
Test Date: 9/22/2010



Filter Class: CFC_180
Max: 0.1 gn at 94.1 ms
Min: -16.4 gn at 13.9 ms



Filter Class: CFC_600
Max: 31.9 mm at 17.8 ms
Min: -0.0 mm at -9.4 ms



Filter Class: CFC_180
Max: 19.8 gn at 15.4 ms
Min: -8.3 gn at 39.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:24:46 814



Transportation Research Center Inc.

Left Lateral Abdomen

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.34 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.8 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	39.3 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	39.0 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	11.34 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:35:52 636

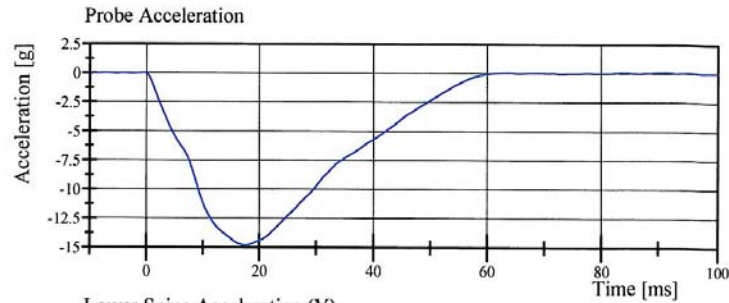


Transportation Research Center Inc.

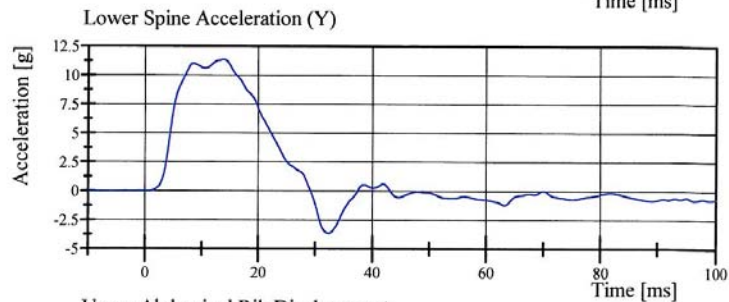
Left Lateral Abdomen

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

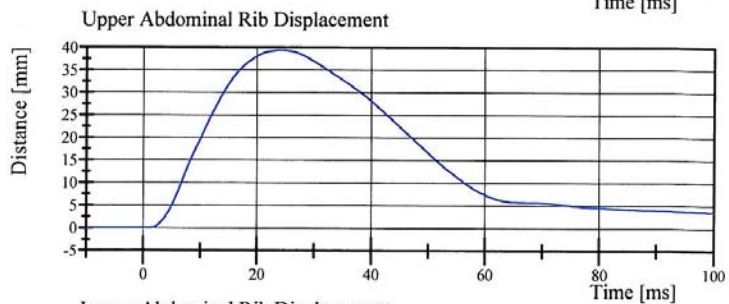
Test Date: 9/22/2010



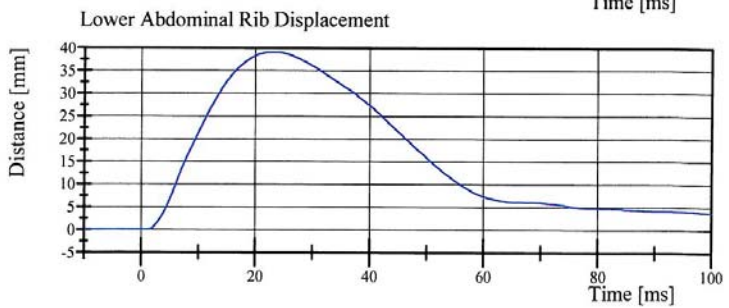
Filter Class: CFC_180
Max: 0.1 gn at 91.5 ms
Min: -14.8 gn at 17.5 ms



Filter Class: CFC_180
Max: 11.3 gn at 13.8 ms
Min: -3.7 gn at 32.4 ms



Filter Class: CFC_600
Max: 39.3 mm at 24.2 ms
Min: -0.0 mm at -5.7 ms



Filter Class: CFC_600
Max: 39.0 mm at 22.6 ms
Min: -0.0 mm at -10.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:36:02 636



Transportation Research Center Inc.

Left Lateral Thorax with Arm

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-2

Test Date: 9/21/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.693 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.9 g	Yes
Shoulder Displacement	31 - 40 mm	35.5 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	27.0 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	30.7 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.1 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	38.4 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	35.8 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.21.2010 14:50:15 611

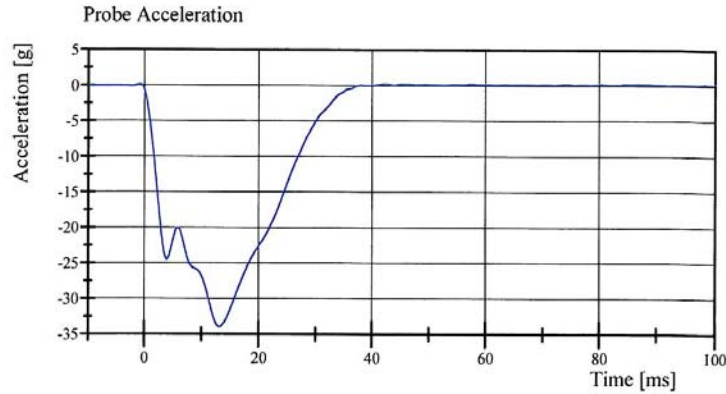


Transportation Research Center Inc.

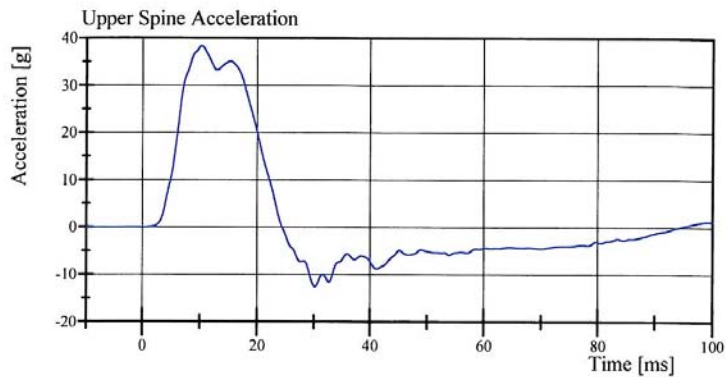
Left Lateral Thorax with Arm

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-2

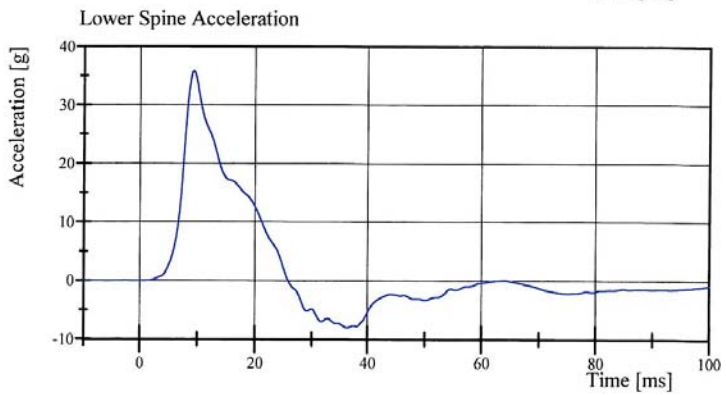
Test Date: 9/21/2010



Filter Class: CFC_180
Max: 0.2 gn at 86.8 ms
Min: -33.9 gn at 13.2 ms



Filter Class: CFC_180
Max: 38.4 gn at 10.2 ms
Min: -12.6 gn at 30.2 ms



Filter Class: CFC_180
Max: 35.8 gn at 9.3 ms
Min: -8.0 gn at 36.2 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.21.2010 14:50:25 611

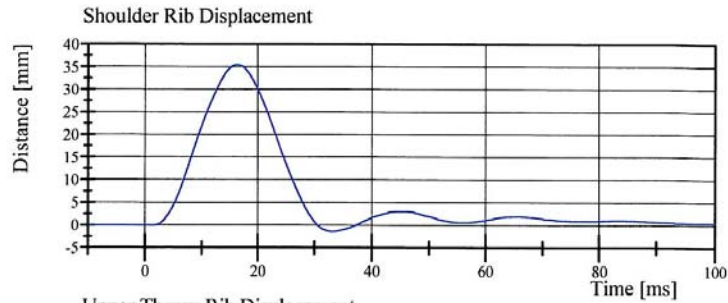


Transportation Research Center Inc.

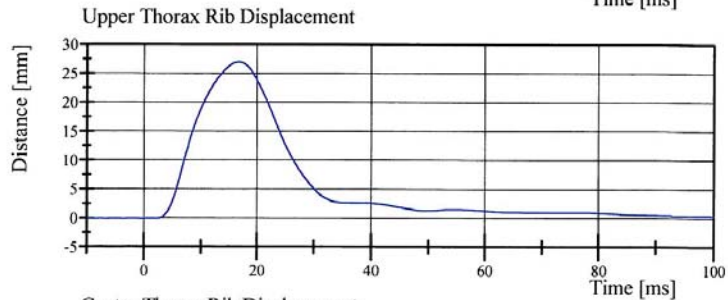
Left Lateral Thorax with Arm

SID II's SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-2

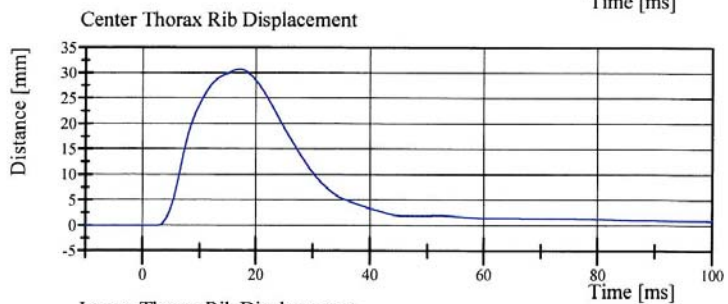
Test Date: 9/21/2010



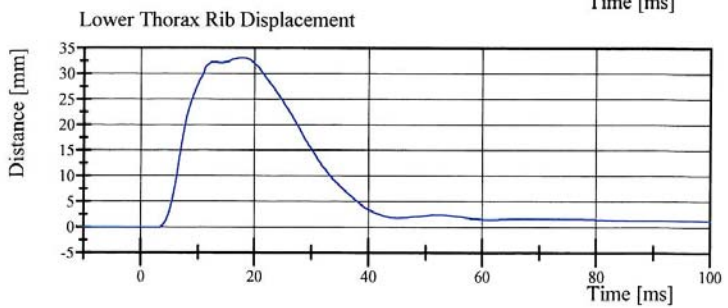
Filter Class: CFC_600
Max: 35.5 mm at 16.3 ms
Min: -1.4 mm at 33.1 ms



Filter Class: CFC_600
Max: 27.0 mm at 16.7 ms
Min: -0.0 mm at -3.7 ms



Filter Class: CFC_600
Max: 30.7 mm at 17.1 ms
Min: -0.0 mm at -7.0 ms



Filter Class: CFC_600
Max: 33.1 mm at 17.4 ms
Min: -0.0 mm at 3.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.21.2010 14:50:26 611



Transportation Research Center Inc.

Left Lateral Thorax without Arm

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/21/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.377 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.3 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	36.8 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	41.0 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	38.0 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	15.7 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.8 g	Yes

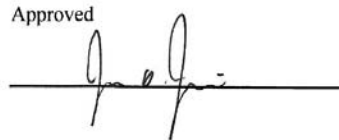
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.21.2010 15:31:17 817

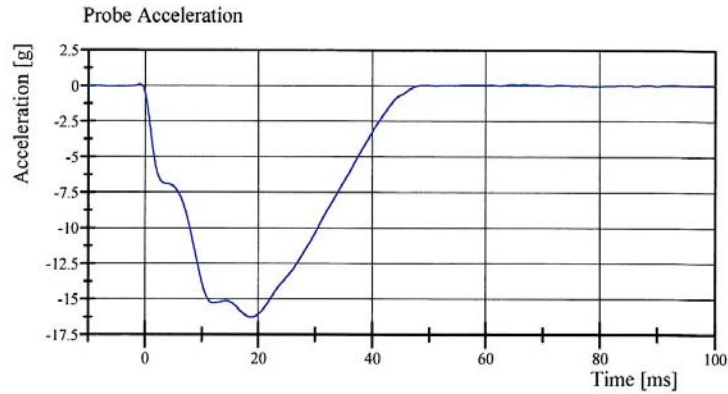


Transportation Research Center Inc.

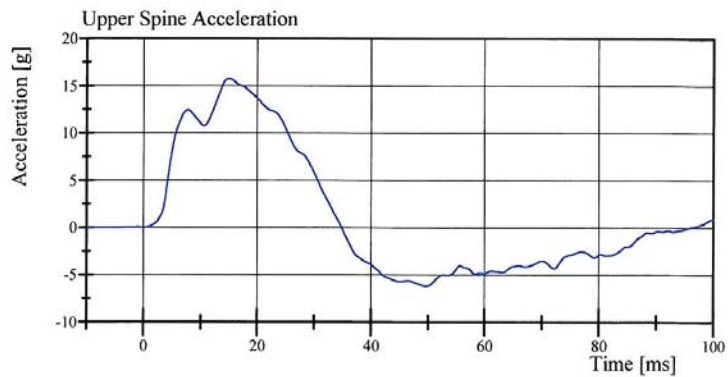
Left Lateral Thorax without Arm

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

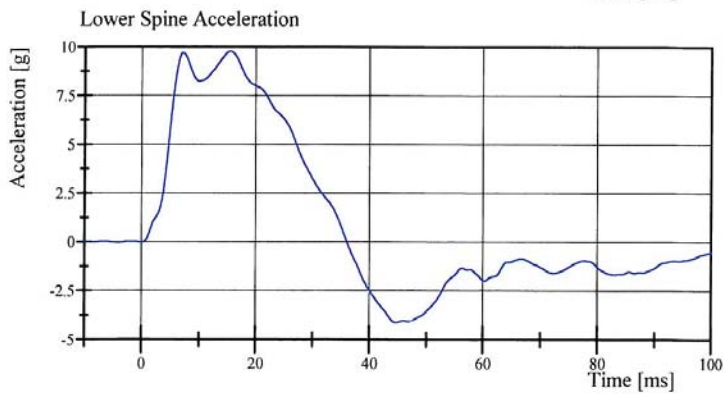
Test Date: 9/21/2010



Filter Class: CFC_180
Max: 0.1 gn at 66.9 ms
Min: -16.3 gn at 18.6 ms



Filter Class: CFC_180
Max: 15.7 gn at 15.0 ms
Min: -6.2 gn at 49.6 ms



Filter Class: CFC_180
Max: 9.8 gn at 15.4 ms
Min: -4.1 gn at 44.6 ms

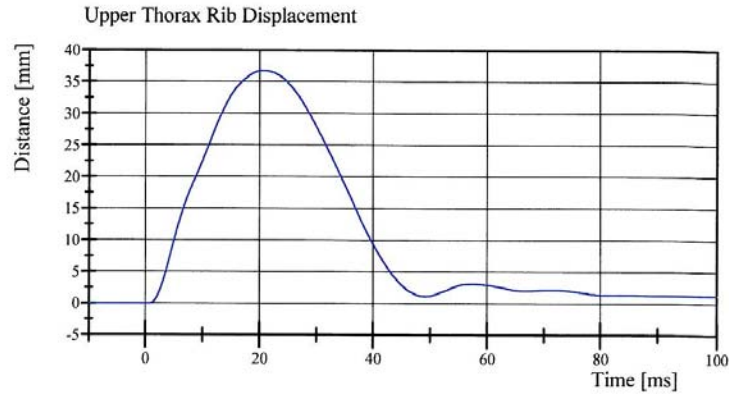
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.21.2010 15:31:26 817

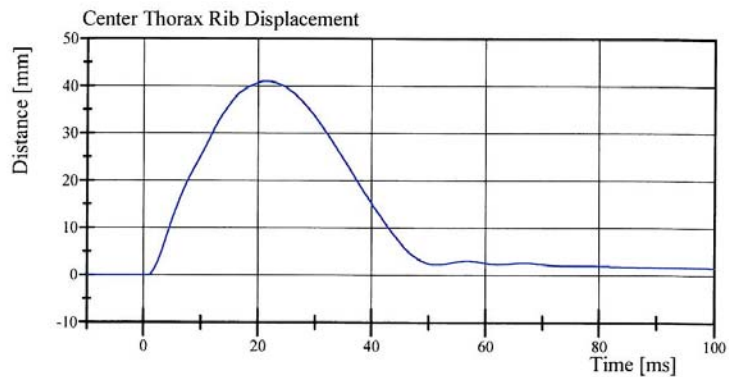


Transportation Research Center Inc.

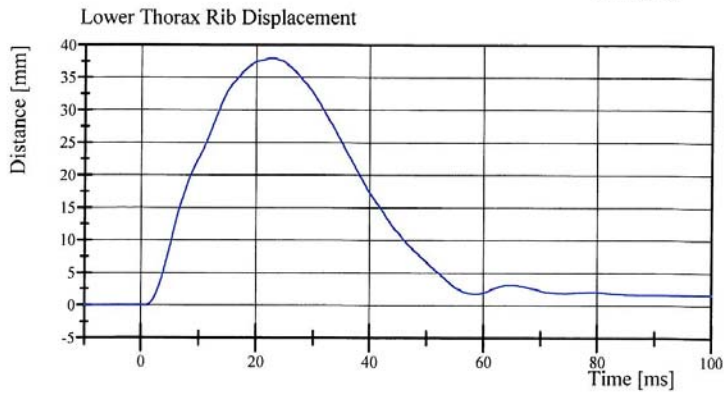
Left Lateral Thorax without Arm
SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1
Test Date: 9/21/2010



Filter Class: CFC_600
Max: 36.8 mm at 20.6 ms
Min: -0.0 mm at 0.6 ms



Filter Class: CFC_600
Max: 41.0 mm at 21.4 ms
Min: -0.0 mm at -4.4 ms



Filter Class: CFC_600
Max: 38.0 mm at 22.6 ms
Min: -0.0 mm at 0.8 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.21.2010 15:31:26 817



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

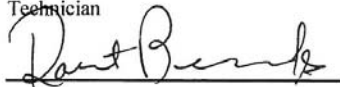
Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.34 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.8 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	39.3 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	39.0 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	11.34 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:35:52 636

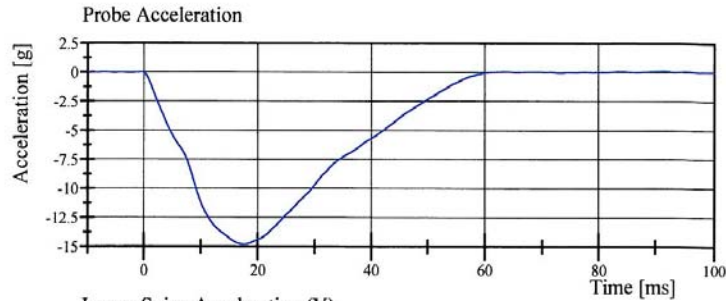


Transportation Research Center Inc.

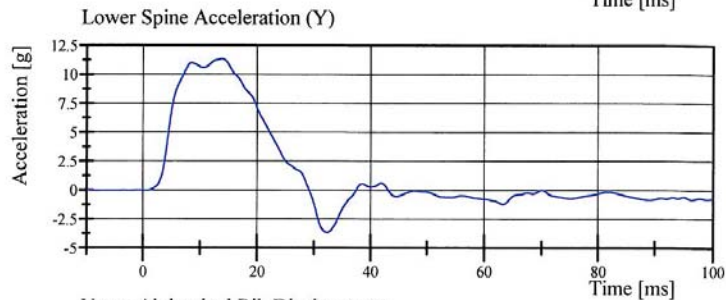
Left Lateral Abdomen

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

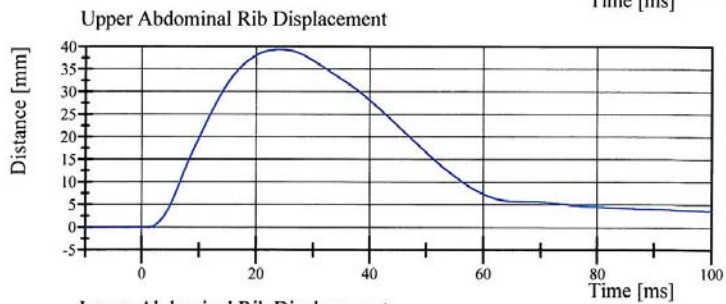
Test Date: 9/22/2010



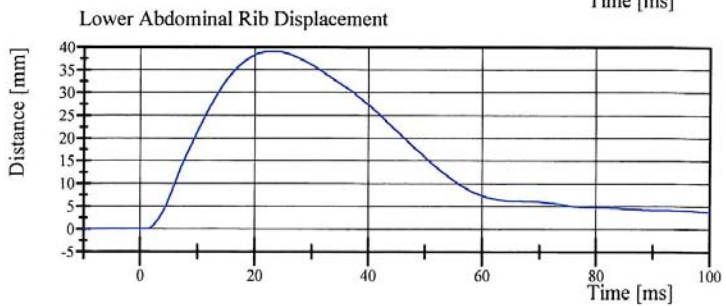
Filter Class: CFC_180
Max: 0.1 gn at 91.5 ms
Min: -14.8 gn at 17.5 ms



Filter Class: CFC_180
Max: 11.3 gn at 13.8 ms
Min: -3.7 gn at 32.4 ms



Filter Class: CFC_600
Max: 39.3 mm at 24.2 ms
Min: -0.0 mm at -5.7 ms



Filter Class: CFC_600
Max: 39.0 mm at 22.6 ms
Min: -0.0 mm at -10.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:36:02 636



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.64 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-41.75 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	36.2 g	Yes
Acetabulum Force	3,600 - 4,300 N	4,218.6 N	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:55:24 434

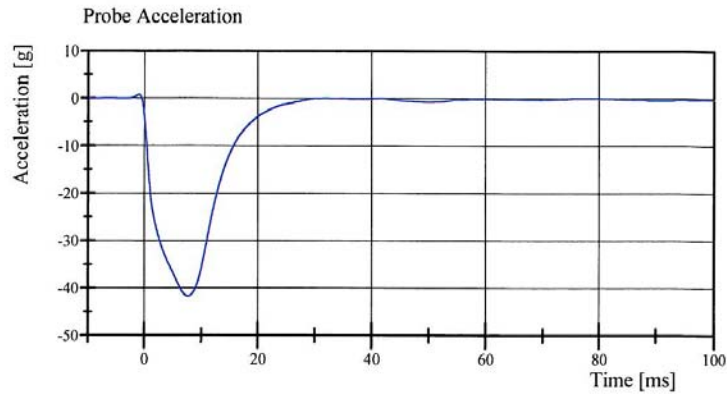


Transportation Research Center Inc.

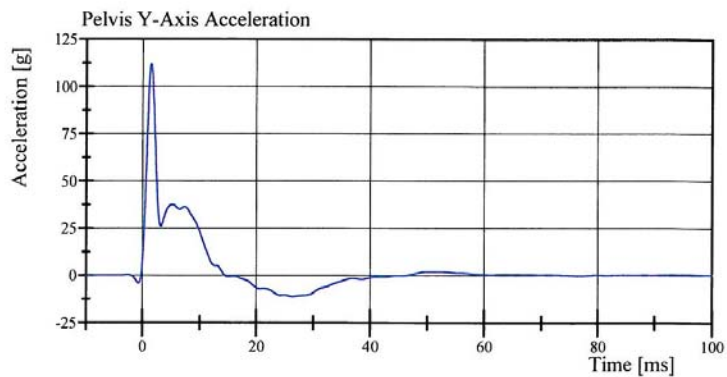
Left Lateral Pelvis

SID II SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

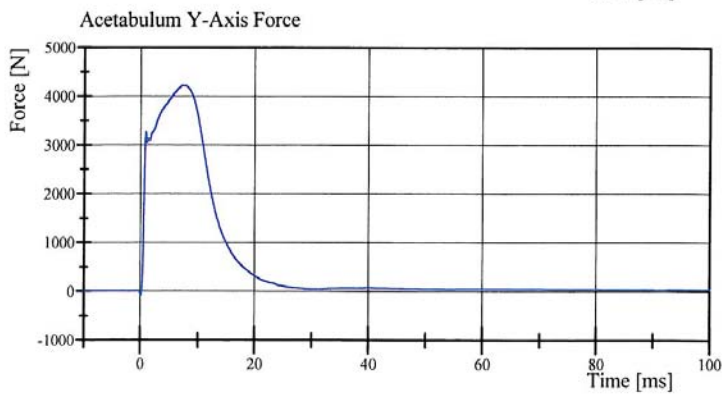
Test Date: 9/22/2010



Filter Class: CFC_180
Max: 0.7 gn at -1.0 ms
Min: -41.8 gn at 7.7 ms



Filter Class: CFC_180
Max: 111.9 gn at 1.4 ms
Min: -11.3 gn at 26.4 ms



Filter Class: CFC_600
Max: 4,218.6 N at 7.3 ms
Min: -77.7 N at 0.1 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 07:55:32 434



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

Test Date: 9/22/2010

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.39 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-41.9 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	33.8 g	Yes
Iliac Force	4,100 - 5,100 N	4,997.8 N	Yes

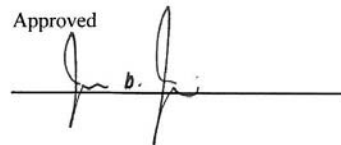
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 11:02:14 634

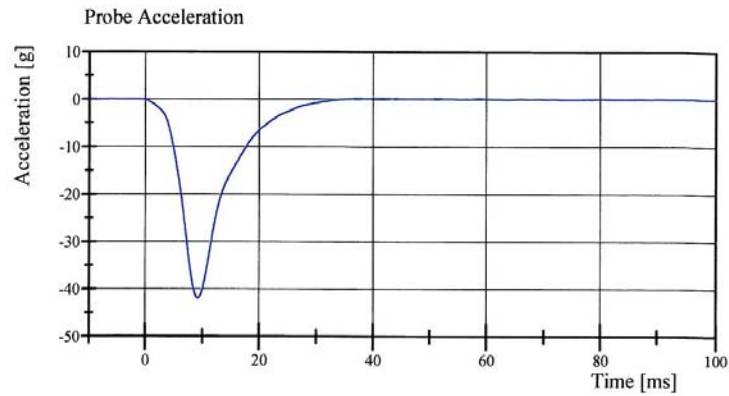


Transportation Research Center Inc.

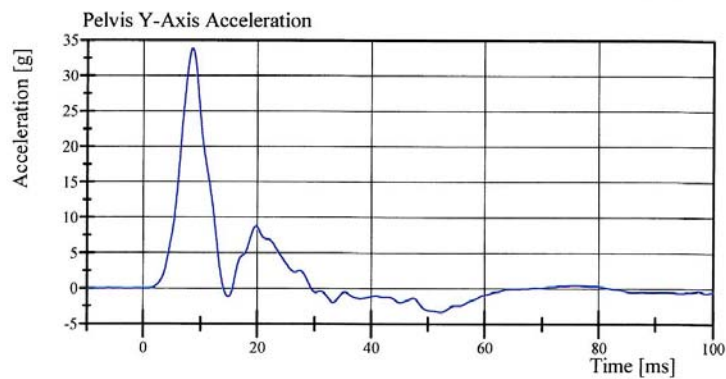
Left Lateral Iliac

SID IIs SBLD Final Rule 6-09 Serial No. 305 Certification No. 3-1

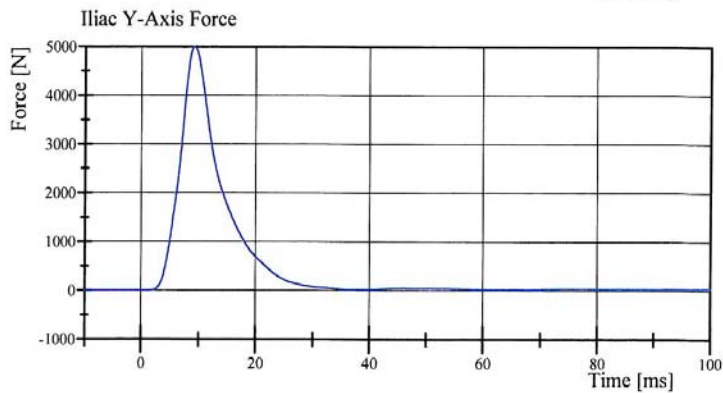
Test Date: 9/22/2010



Filter Class: CFC_180
Max: 0.2 gn at 41.6 ms
Min: -41.9 gn at 9.2 ms



Filter Class: CFC_180
Max: 33.8 gn at 8.6 ms
Min: -3.3 gn at 52.2 ms



Filter Class: CFC_600
Max: 4,997.8 N at 9.1 ms
Min: -1.0 N at -8.9 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

09.22.2010 11:02:25 634



Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. 305 Calibration No.03
Date: 9/22/10

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	775	Yes
B	Shoulder Pivot Height	437.0 - 453.0	439	Yes
C	H-Point Height	79.0 - 89.0	83	Yes
D	H-Point from Seat Back	141.0 - 151.0	145	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	105	Yes
F	Thigh Clearance	119.0 - 135.0	130	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	183	Yes
J	Head Circumference	541.0 - 551.0	543	Yes
K	Buttock to Knee Length	514.0 - 540.0	535	Yes
L	Popliteal Height	343.0 - 369.0	354	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	402	Yes
N	Buttock Popliteal Length	416.0 - 442.0	430	Yes
O	Chest Depth without Jacket	195.0 - 211.0	206	Yes
P	Foot Length (right)	216.0 - 232.0	220	Yes
P	Foot Length (left)	216.0 - 232.0	220	Yes
Q	Hip Breadth	313.0 - 323.0	313	Yes
R	Arm Length	249.0 - 259.0	253	Yes
S	Knee Joint to seat Back	478.0 - 493.0	480	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	351	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	865	Yes
Z	Waist Circumference	761.0 - 791.0	780	Yes

Technician



Approved



Revised 9/29/2005

