

DRAFT REPORT NUMBER: SPNCAP-TRC-16-003

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

**FCA US LLC
2016 Chrysler 300 4-Door Sedan
NHTSA NUMBER: M20160301**

**PREPARED BY:
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Report Date: January 12, 2016

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NRM-110
1200 New Jersey Ave, SE
Room W43-410
Washington, D.C. 20590**

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Melinda Lackey, Project Manager

Approval Date: January 12, 2016

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

Technical Report Documentation Page

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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 2016 Chrysler 300 4-Door Sedan, 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 November 24, 2015. The impact velocity was 32.19 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 22° C. The test vehicle's post-test maximum crush was 365 mm at Level 3. The test or target vehicle's performance is given below: <table border="1"> <thead> <tr> <th></th><th>Unit</th><th>Threshold</th><th>Front SID-IIs</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆):</td><td>NA</td><td>1000</td><td>360</td></tr> <tr> <td>Resultant Lower Spine Acceleration:</td><td>g's</td><td>82</td><td>47.9</td></tr> <tr> <td>Total Pelvic Force: (sum of acetabular and iliac forces)</td><td>N</td><td>5525</td><td>3157.4</td></tr> <tr> <td>Maximum Thoracic Rib Deflection</td><td>mm</td><td>38</td><td>25.8</td></tr> <tr> <td>Maximum Abdomen Rib Deflection</td><td>mm</td><td>45</td><td>35.0</td></tr> </tbody> </table> The door struck by the pole did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.					Unit	Threshold	Front SID-IIs	Head Injury Criteria (HIC ₃₆):	NA	1000	360	Resultant Lower Spine Acceleration:	g's	82	47.9	Total Pelvic Force: (sum of acetabular and iliac forces)	N	5525	3157.4	Maximum Thoracic Rib Deflection	mm	38	25.8	Maximum Abdomen Rib Deflection	mm	45	35.0
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																									
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SECTION 1
TEST PURPOSE AND PROCEDURE

TEST PURPOSE AND PROCEDURE

This side impact test was conducted as part of the MY16 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00354. The purpose of this test is to generate comparative side impact performance in a 2016 Chrysler 300 4-Door Sedan manufactured by FCA US LLC. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated October 2015.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a model year 2016 Chrysler 300 4-Door Sedan. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.19 km/h. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on November 24, 2015. Pre-test and post-test photographs of the test vehicle and the side impact dummy (SID-IIs) are included in Appendix A of this report.

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 October 2015. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) dummy was instrumented accordingly:

- Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper and Lower Rib Displacement Potentiometers
- Lower Spine (T12) Triaxial Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

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

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Driver ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)	NA	1000	360
Lower Spine Acceleration Resultant	G	82	47.9
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3157.4
Maximum Thoracic Rib Deflection	mm	38*	25.8
Maximum Abdominal Rib Deflection	mm	45*	35.0

* 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		
Knee Airbag	Yes	No		
Curtain	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Pelvis Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	N/A	No	N/A
Seat Belt Load Limiter	Yes	N/A	No	N/A
Center Seat Airbag	No	N/A	No	N/A

GENERAL COMMENTS

None

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
Test Date: 11/24/15

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20160301	Traction Control System (TCS)	Yes
Model Year	2016	Auto-Leveling System	No
Make	Chrysler	Automatic Door Locks (ADL)	Yes
Model	300	Power Window Auto-Reverse	Yes
Body Style	Sedan	Other Optional Feature	No
VIN	2C3CCAAG0GH134975	Driver Front Airbag	Yes
Body Color	Silver	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	62 mi.	Driver Head/Torso Airbag	No
Engine Displacement (L)	3.6	Driver Torso Airbag	No
Type/No. Cylinders	Gas/6	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Front/Longitudinal	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	8	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	RWD	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	Yes	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
		Other Safety Restraint	No

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	FCA US LLC	GWR (kg)	2314
Date of Manufacturer	10/15	GAWR Front (kg)	1275
Vehicle Type	Passenger Car	GAWR Rear (kg)	1275

VEHICLE SEATING AND WEIGHT CAPACITY DATA

	Front	Rear	Third	Total
Designated Seating Capacity (DSC)	2	3	N/A	5
Vehicle Capacity Weight (VCW) (kg)				392.0
DSC X 68.04 kg				340.2
Rated Cargo and Luggage Weight (RCLW) (kg)				51.8

VEHICLE SEAT TYPE

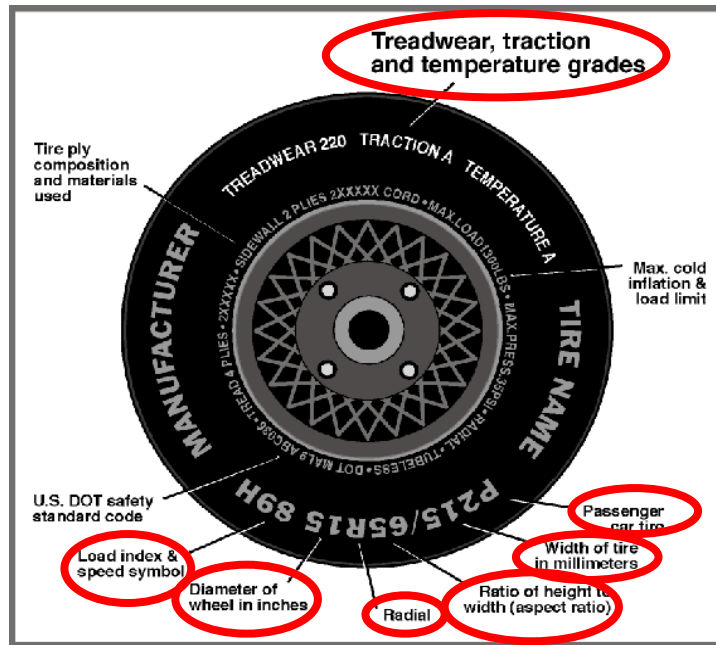
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	Yes	N/A	N/A		N/A	Yes	N/A
Rear or Second Row Seat	N/A	N/A	Yes	Yes	Yes	N/A	N/A
Third row seat	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
Test Date: 11/24/15



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	P215/65R17	P215/65R17
Tire Size on Vehicle	P215/65R17	P215/65R17
Tire Manufacturer	Michelin	Michelin
Tire Model	Energy Saver A/S	Energy Saver A/S
Treadwear	480	480
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	1	1
Tire Plies Body	4	4
Load Index/Speed Symbol	98T	98T
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel
DOT Safety Code Left	M322 00BX 3815	M322 00BX 3915
DOT Safety Code Right	M322 00BX 3815	M322 00BX 3915

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

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	228	228	228	228
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	N/A	N/A	N/A	N/A
As Tested	kPa	220	220	220	220

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	467.0	434.8		492.8	456.6		496.2	480.2	
Right	kg	475.2	434.0		486.2	470.0		474.4	461.8	
Ratio	%	52.0	48.0		51.4	48.6		50.7	49.3	
Totals	kg	942.2	868.8	1811.0	979.0	926.6	1905.6	970.6	942.0	1912.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total As Delivered Weight (UVW)	kg	1811.0
Actual Weight of 1 P572V ATD (SID-IIs) Dummy Used	kg	49.0
Rated Cargo/Luggage Weight (RCLW)	kg	51.8
Calculated Vehicle Target Weight (TVTW)	kg	1911.8

(A)

(B)

(C)

(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 kg)? ☒ YES ☐ NO

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Ballast: None	0.0
Components removed: Tail lights	3.2

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	Deg.	-0.2	-0.2	0.0	Yes
Front Passenger Sill Angle (front-to-rear)*	Deg.	-0.3	-0.3	-0.1	Yes
Front Bumper-Line Angle (left-to-right)**	Deg.	-0.1	-0.5	-0.5	Yes
Rear Bumper-Line Angle (left-to-right)**	Deg.	-0.2	-0.1	-0.1	Yes
Vehicle CG (Aft of Front Axle)	mm	1466	1485	1505	
Vehicle CG (Left (+) / Right (-) from longitudinal Centerline)	mm	-3.3	-2.9	+16.8	

*ND=Nose Down (-), NU=Nose Up (+) **LD=Left Down (-), LU=Left Up (+)

*** The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements. Indicate "Yes" or "No" for "Meets Requirements".

DATA SHEET NO. 2

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

Test Vehicle: 2016 Chrysler 300 4-Door Sedan

NHTSA No.: M20160301

Test Program: SPNCAP Side Impact

Test Date: 11/24/15

SEAT POSITIONING

The driver seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, 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 rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL(°)		
	Max.	Min.	Mid
Driver Seat	16.0	8.8	12.4
Front Passenger Seat	15.0	8.5	11.8
Front Center Seat*	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	N/A
Non-Struck Side Rear Seat	Fixed	N/A	N/A
Rear Center Seat*	Fixed	N/A	N/A

* If applicable.

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCR Height (mm)	SCR Height Position	SCR Height (mm)		
				Rearmost	Mid- Fore/Aft	Forward- Most
Driver Seat	12.4	223	Max	231	240	249
			Mid	205	214	223
			Min	180	189	198
Front Passenger Seat	11.8	232	Max	241	249	257
			Mid	216	224	232
			Min	190	198	206
Front Center Seat*	N/A	N/A	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Struck Side Rear Seat	12.5	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Non-Struck Side Rear Seat	11.9	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Rear Center Seat*	9.4	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A

* If applicable.

DATA SHEET NO. 2 (CONTINUED)

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

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15

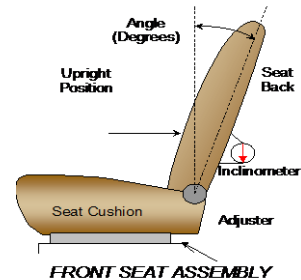
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	257	N/A	0	N/A
Front Passenger Seat	220	N/A	0	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	Fixed	N/A
Non-Struck Side Rear Seat	Fixed	N/A	Fixed	N/A
Rear Center Seat*	Fixed	N/A	Fixed	N/A

* If applicable.

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1. For the 5th percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detent*
Driver Seat w/ Seated Dummy	70.7	N/A	3.0 rwd	N/A
Front Passenger Seat	70.4	N/A	3.0 rwd	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	23.5	N/A
Non-Struck Side Rear Seat	Fixed	N/A	20.9	N/A
Rear Center Seat*	Fixed	N/A	23.2	N/A

* If applicable.

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted with the information provided by the manufacturer on Form No. 1

	Total # of Positions	Placed in Position #
Driver Seat	4, numbered from 0 to 3	0, Uppermost

HEAD RESTRAINT ADJUSTMENT

Head restraints are adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	3, numbered from 0 to 2	2, Lowermost

DATA SHEET NO. 2 (CONTINUED)

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

Test Vehicle: 2016 Chrysler 300 4-Door Sedan

NHTSA No.: M20160301

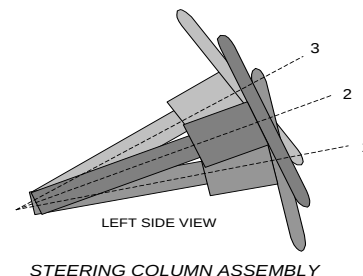
Test Program: SPNCAP Side Impact

Test Date: 11/24/15

STEERING COLUMN ADJUSTMENT

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

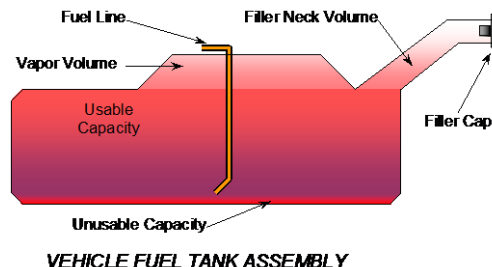
	Degrees	Fore/Aft Position, mm
Lowermost, Position No. 1	69.6	200
Geometric Center, Position No. 2	67.35	200
Uppermost, Position No. 3	65.1	200
Telescoping Steering Wheel Travel		53
Test Position	67.3	227



FUEL PUMP

Describe the fuel pump type, detail about how it operates and the location of the fuel filler neck:

Fuel tank is located in front of the rear axle. Filler neck enters the right side of the tank. Cap is on right rear quarter panel. Fuel pump will run when engine is running. Also, it will run briefly when ignition key is turned to the "ON" position without starting the engine.



FUEL TANK CAPACITY

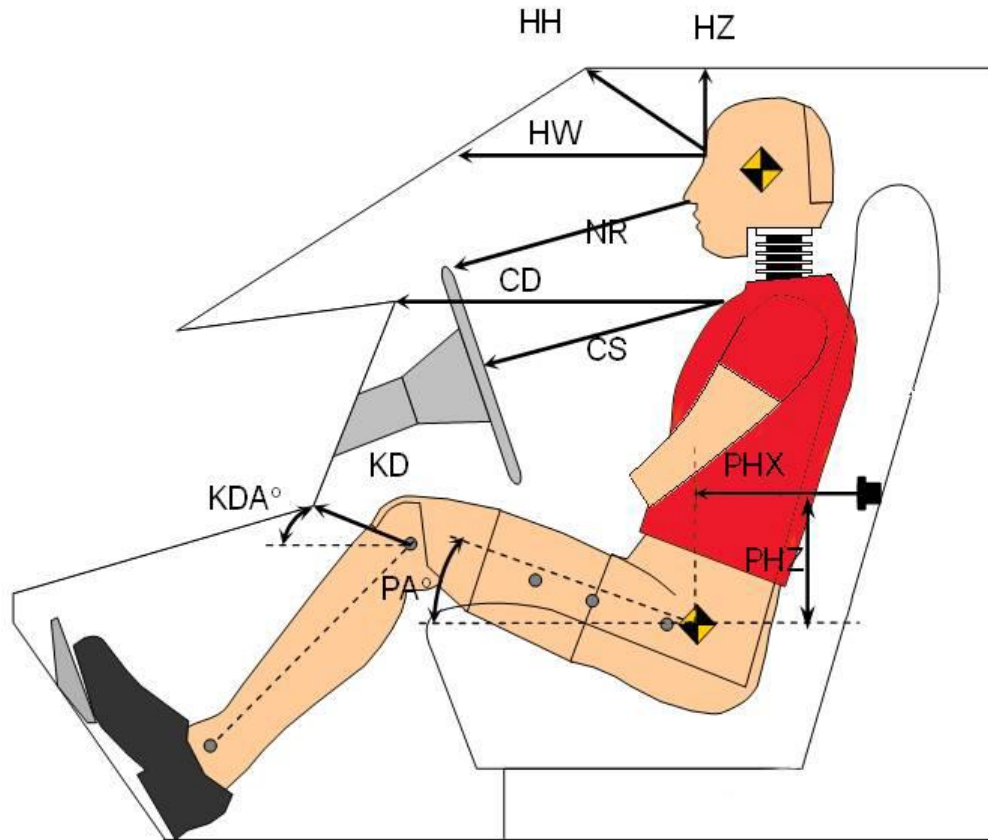
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	70.0
Usable Capacity of "Optional" Tank (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	69.9
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	65.1
Actual Amount of Solvent Used in Test	65.1
1/3 of Usable Capacity	23.3

Is the Actual Amount of Solvent Used in the test equal to 93% +/- 1% of the Usable Capacity stated on Form No. 1? X YES ☐ NO

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15

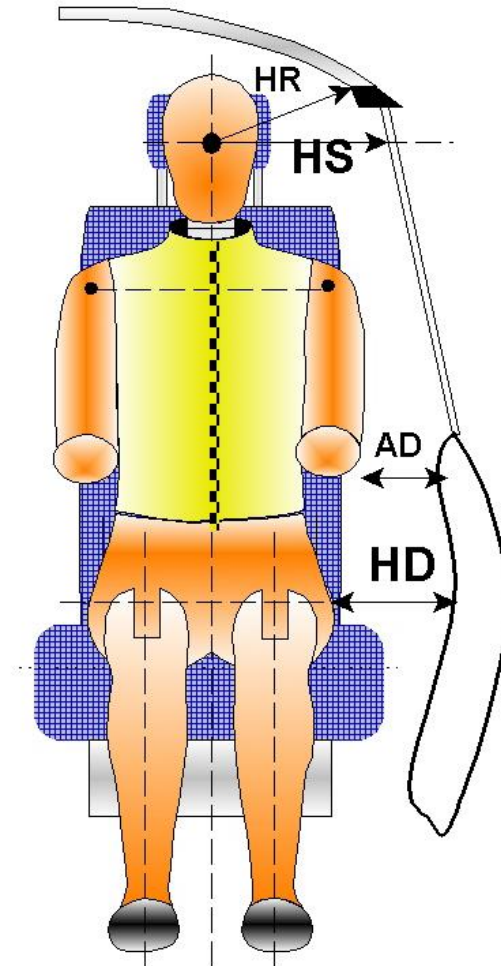


Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	308	
HW	Head to Windshield	603	
HZ	Head to Visor	179	
NR	Nose to Rim	186	
CD	Chest to Dashboard	380	
CS	Chest to Steering Wheel	128	
KDL/KDLA°	Left Knee to Dash	108	40.7
KDR/KDRA°	Right Knee to Dash	95	40.5
PAX°	Pelvic Tilt Angle (X-axis)		0.7 left up
PAY°	Pelvic Tilt Angle (Y-axis)		22.4
PHX	Hip Point to Striker (X-Axis)	329	
PHZ	Hip Point to Striker (Z-Axis)	116	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
Test Date: 11/24/15

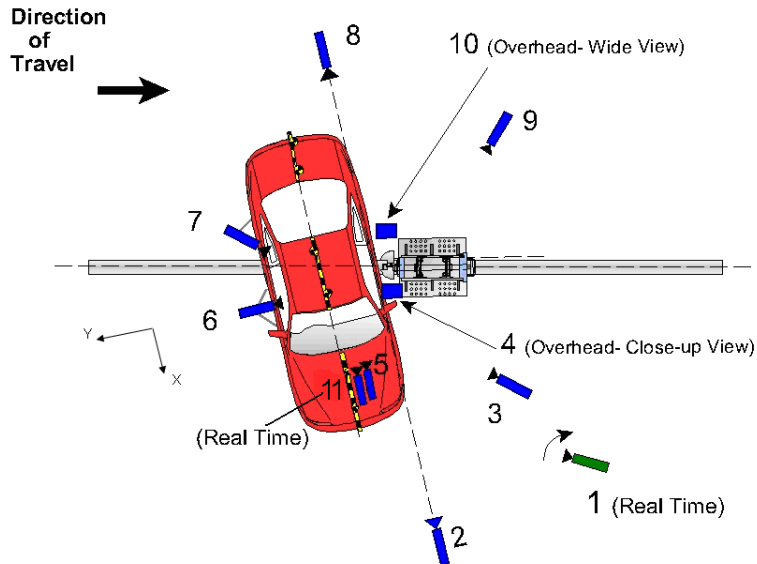


Code	Measurement Description	Length (mm)
HR	Head to Side Header	226
HS	Head to Side Window	379
AD	Arm to Door	191
HD	Hip Point to Door	183

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15



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

Camera No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Real time (24-30 fps) pan view of impact				Zoom	30
2	Front ground level – impact view	5691	0	-1246	20	1000
3	Impact side 45° – forward pole view	3472	-1076	-1346	20	1000
4	Overhead Close-up view of impact	56	0	-5698	Zoom	1000
5	Onboard – dummy front view				25	1000
6	Onboard – dummy side view				12.5	1000
7	Onboard – dummy rear oblique view				12.5	1000
8	Rear ground level – impact view	5338	0	-1381	20	1000
9	Impact side 45° – rearward pole view	3236	-2112	-1382	20	1000
10	Overhead wide view of impact	-90	320	-5716	18	1000
11	Real time dummy front view				Zoom	30

All measurements accurate to +/- 6 mm.

NOTE: Vehicle was at a 75° angle to the rigid pole.

If applicable, explain why camera(s) did not run: Not Applicable

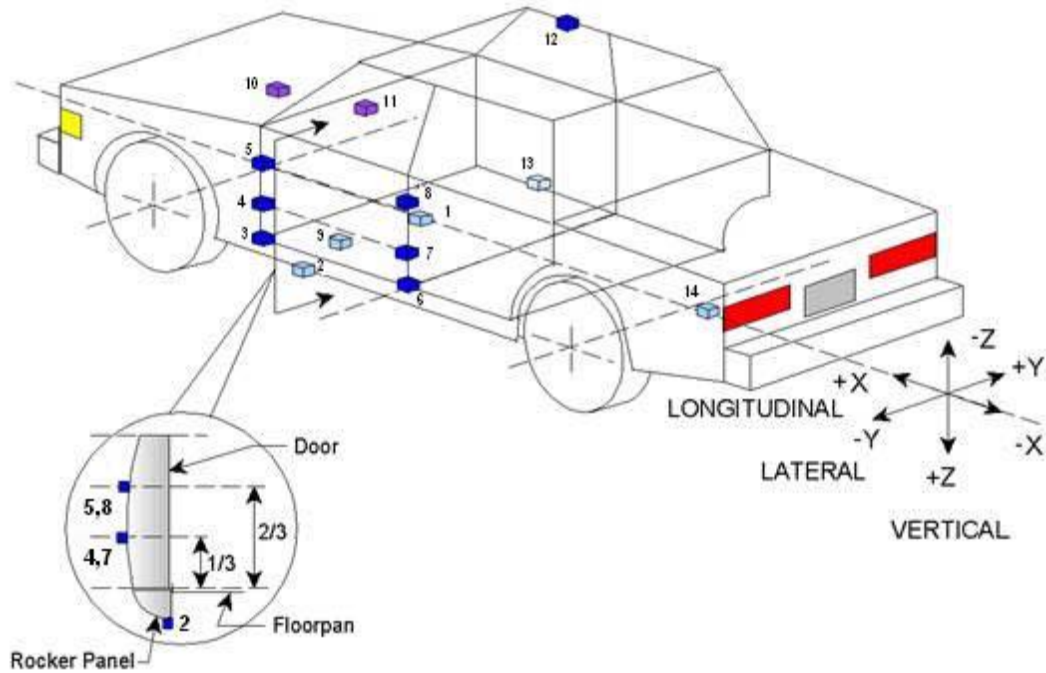
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	18
Pole Load Cells	8
TOTAL	42

DATA SHEET NO. 6
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15



	Accelerometer/Sensor Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2880	107	-378
2	Left Floor Sill	3035	-735	-306
3	A-Pillar Sill	3343	-735	-304
4	A-Pillar Low	3445	-880	-504
5	A-Pillar Mid	3450	-880	-861
6	B-Pillar Sill	2240	-720	-287
7	B-Pillar Low	2365	-882	-542
8	B-Pillar Mid	2352	-888	-870
9	Driver Seat Track	2644	-570	-304
10	Engine Top	4140	-71	-937
11	Firewall	3908	-55	-939
12	Right Roof	2480	630	-1425
13	Right Floor Sill	3030	735	-295
14	Rear Floorpan	822	0	-502

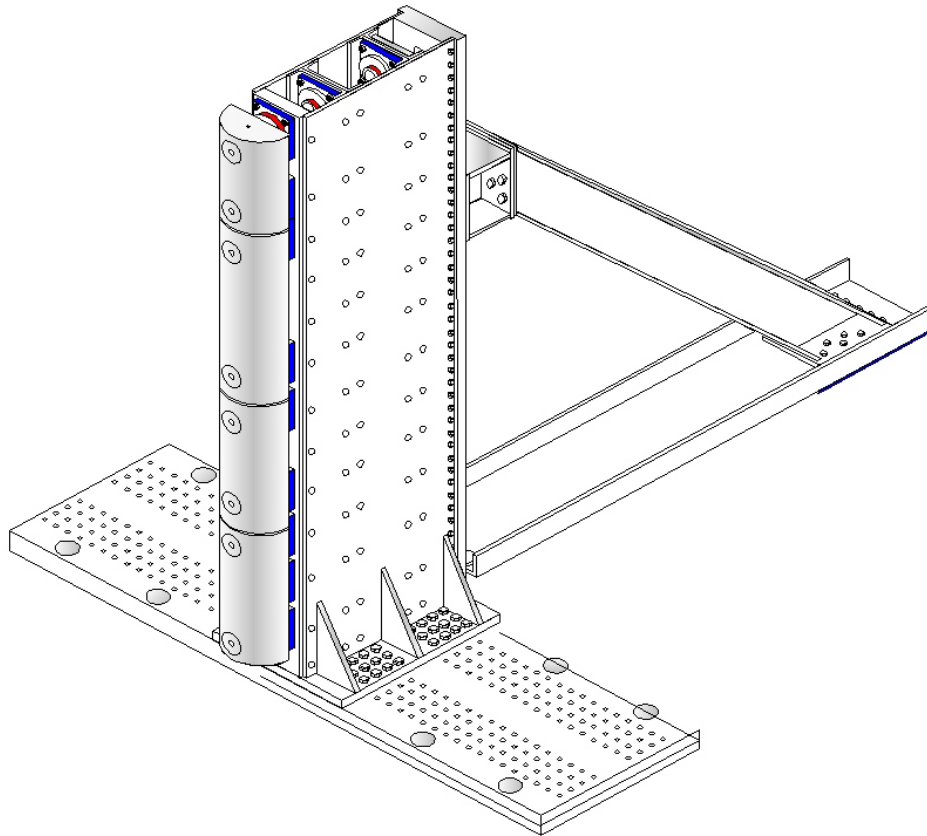
Reference: X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
Test Date: 11/24/15

FOIL 300K RIGID POLE



Load Cell Locations	
ID	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: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
Test Date: 11/24/15

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	SCAB
Top of Head	SCAB and Visor
Left Side of Head	SCAB and Visor
Back of Head	SCAB
Left Shoulder	Torso/Pelvis Airbag
Upper Torso	None
Lower Torso	None
Left Hip	Torso/Pelvis Airbag
Left Knee	Door Panel

POST TEST DOOR PERFORMANCE

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

* Indicate "Yes", "No", or "NA".

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

* Indicate "Yes", "No", or "NA".

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Minor Deformation
Sill Separation	None Visible
Windshield Damage	Broken
Side Window Damage	Broken
Other Notable Effects	None

DATA SHEET NO. 8 (CONTINUED)
POST TEST OBSERVATIONS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side (Driver)		Struck Side (Rear Passenger)	
	Mounted	Deployed	Mounted	Deployed
Front Airbag	Yes	No		
Knee Airbag	Yes	No		
Curtain	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Seat Belt Pretensioner	Yes	N/A	No	N/A
Seat Belt Load Limiter	Yes	N/A	No	N/A
Center Seat Airbag	No	N/A	No	N/A

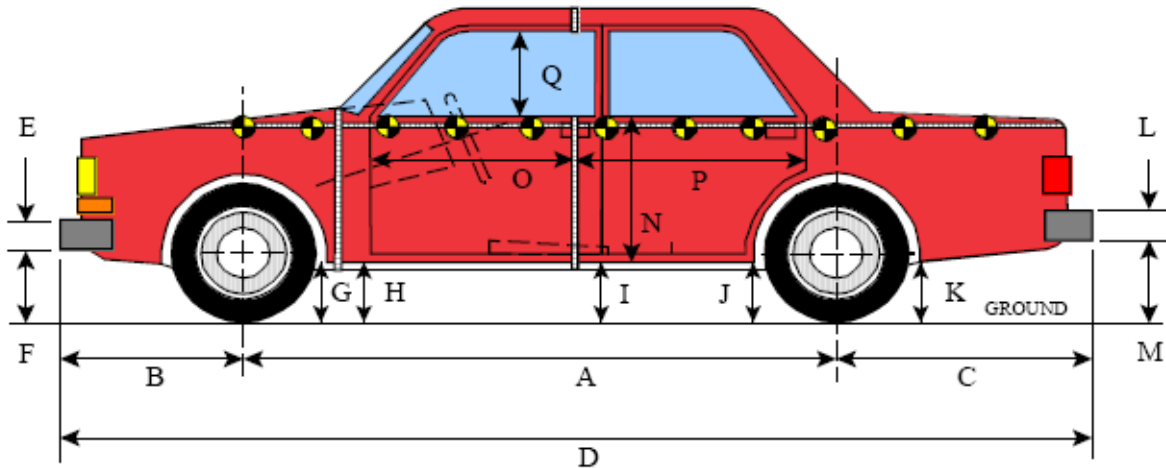
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1360
Actual Impact Point (Aft of Front Axle)	mm		1368
Horizontal Offset (+ forward / - rearward)	mm	+/- 38 of Intended Impact point	+8
Angle Between Vehicle's Longitudinal Centerline and Line of Motion	degrees	75 +/- 3	75
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.19
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.17

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15



LEFT SIDE VIEW

All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3 mm

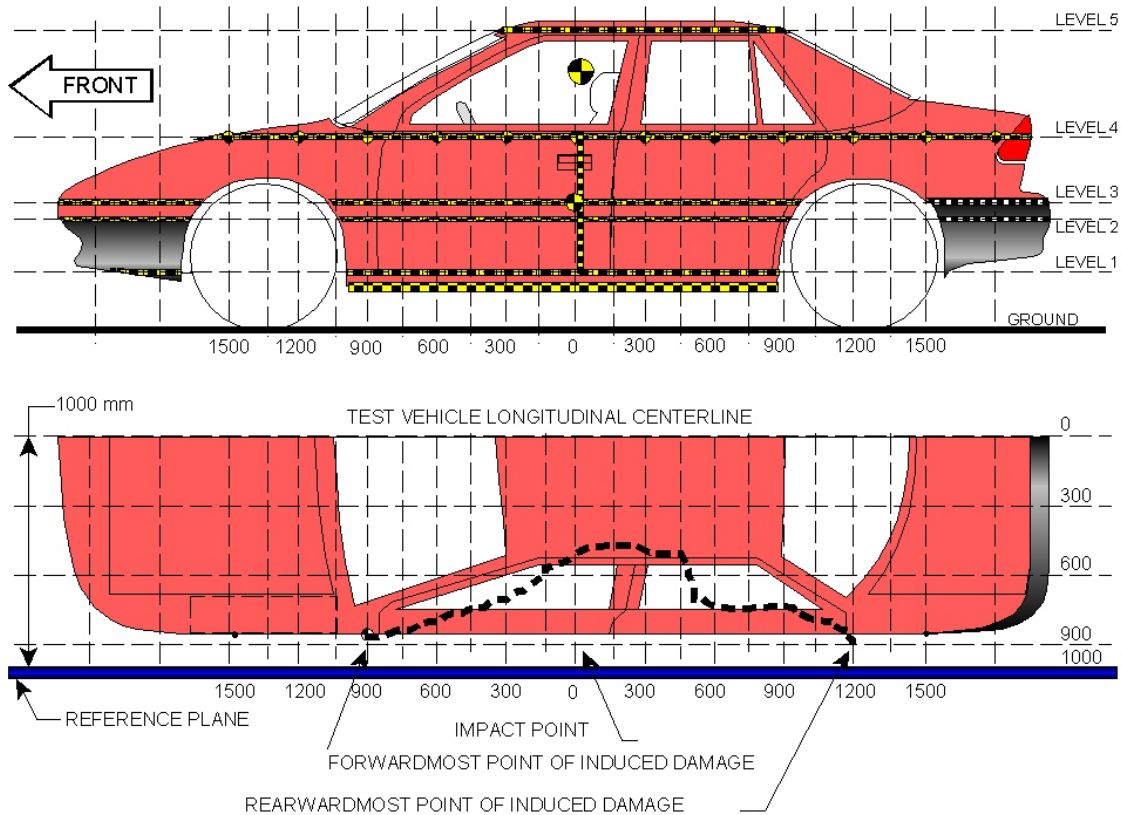
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3055	2990	65
B	Front Axle to Front Surface of Vehicle	890	890	0
C	Rear Axle to Rear Surface of Vehicle	1115	1115	0
D	Total Length at Centerline	5060	5020	40
E	Front Bumper Thickness	207	207	0
F	Front Bumper Bottom to Ground	366	380	-14
G	Sill Height at Front Wheel Well	254	235	19
H	Sill Height at Front Door Leading Edge	256	250	6
I	Sill Height at B-Pillar	265	297	-32
J1	Sill Height at Rear Wheel Well	263	310	-47
J2	Pinch Weld Height at Rear Wheel Well	164	200	-36
K	Sill Height Aft of Rear Wheel Well	278	308	-30
L	Rear Bumper Thickness	249	249	0
M	Rear Bumper Bottom to Ground	442	470	-28
N	Sill Height to Bottom of Front Window Sill	774	800	-26
O	Front Door Leading Edge to Impact CL	708	618	90
P	Rear Door Trailing Edge to Impact CL	1578	1460	118
Q	Front Window Opening	383	360	23
R	Right Side Length	4765	4800	-35
S	Left Side Length	4775	4710	65
T	Vehicle Width at "B" Pillars	1880	1765	115

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15



NOTE: All measurements are in millimeters (mm)

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	347	306	0
2	Occupant H-Point	593	358	0
3	Mid-Door	650	365	0
4	Window Sill	953	321	0
5	Window Top	1424	115	0

NOTE: The above measurements should be taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15

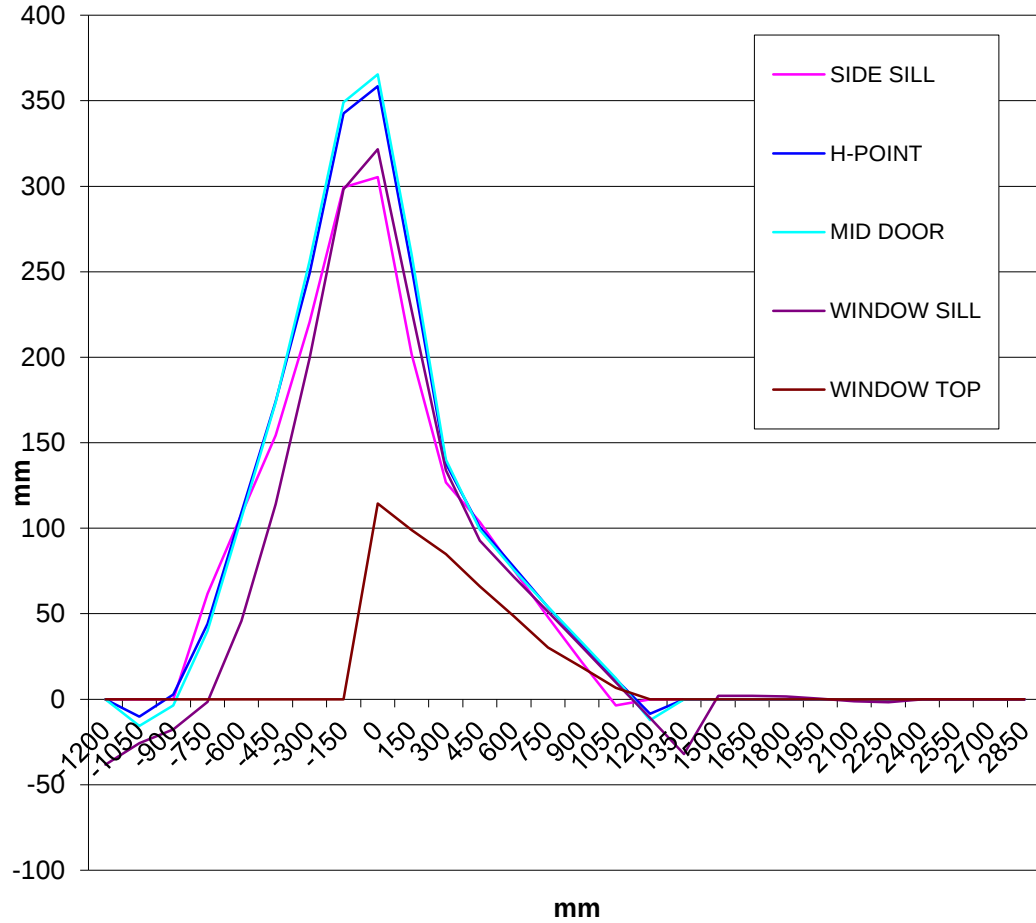
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900	888	922	924	839	0	868	919	928	856	0	20	3	-4	-17	0
-750	887	923	925	846	0	825	879	885	848	0	62	44	40	-2	0
-600	886	925	928	853	0	778	816	822	807	0	108	109	106	46	0
-450	886	926	930	859	0	732	752	756	745	0	154	174	174	114	0
-300	886	927	931	864	0	666	678	674	665	0	220	249	257	199	0
-150	887	927	931	870	0	588	585	582	571	0	299	342	349	299	0
0	888	927	931	874	594	582	569	566	553	479	306	358	365	321	115
150	888	927	931	879	601	687	675	671	652	503	201	252	260	227	98
300	888	926	930	883	605	762	788	790	749	520	126	138	140	134	85
450	885	923	927	885	608	782	822	828	793	542	103	101	99	92	66
600	884	920	924	888	609	808	843	849	817	561	76	77	75	71	48
750	881	917	921	887	610	833	863	867	836	579	48	54	54	51	31
900	878	913	918	885	608	856	880	885	854	589	22	33	33	31	19
1050	886	913	915	883	598	890	902	903	873	591	-4	11	12	10	7
1200	0	926	929	879	0	0	934	941	890	0	0	-8	-12	-11	0
1350	0	0	0	874	0	0	0	0	906	0	0	0	0	-32	0
1500	0	0	0	867	0	0	0	0	865	0	0	0	0	2	0
1650	0	0	0	860	0	0	0	0	858	0	0	0	0	2	0
1800	0	0	0	853	0	0	0	0	852	0	0	0	0	1	0
1950	0	0	0	844	0	0	0	0	844	0	0	0	0	0	0
2100	0	0	0	833	0	0	0	0	834	0	0	0	0	-1	0
2250	0	0	0	820	0	0	0	0	822	0	0	0	0	-2	0

NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

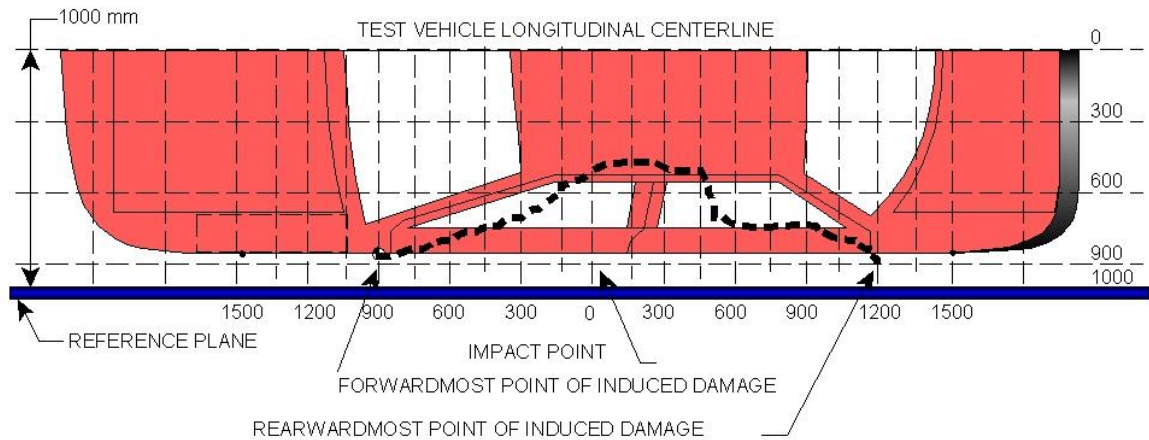
NHTSA No.: M20160301
Test Date: 11/24/15



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
 Test Date: 11/24/15



VEHICLE DAMAGE PROFILE DISTANCES¹

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	1800	4	853	852	0
2	1200	1	0	0	0
3	750	3 ²	867	921	54
4	150	3	671	931	260
5	-300	3	674	931	257
6	-900	1	868	888	0

¹ DPD 1 and 6 defined as zero crush since the crush doesn't extend to the end of the vehicle.

² DPD 3 maximum crush of 54 mm was achieved at both level 2 and level 3.

DATA SHEET NO. 12

FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan

NHTSA No.: M20160301

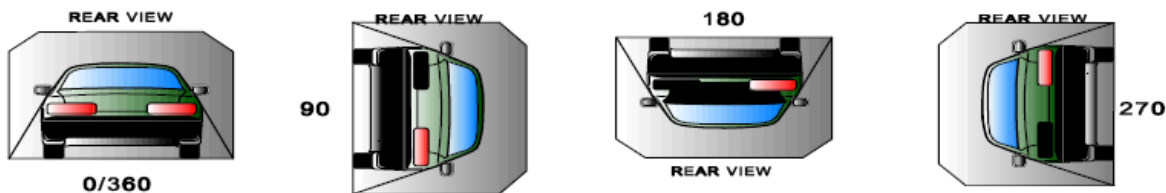
Test Program: SPNCAP Side Impact

Test Date: 11/24/15

Test Time: 14:38 Temperature: 22.0°C

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable is 1 ounce)
- B. For the 5 minute period after motion ceases: 0
(Maximum allowable is 5 ounces)
- C. For the following 25 minutes: 0
(Maximum allowable is 1 ounce/minute)
- D. Spillage Data1LS: None

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0 to 90	90	330	420
90 to 180	90	330	840
180 to 270	90	330	1260
270 to 360	90	330	1680

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

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

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

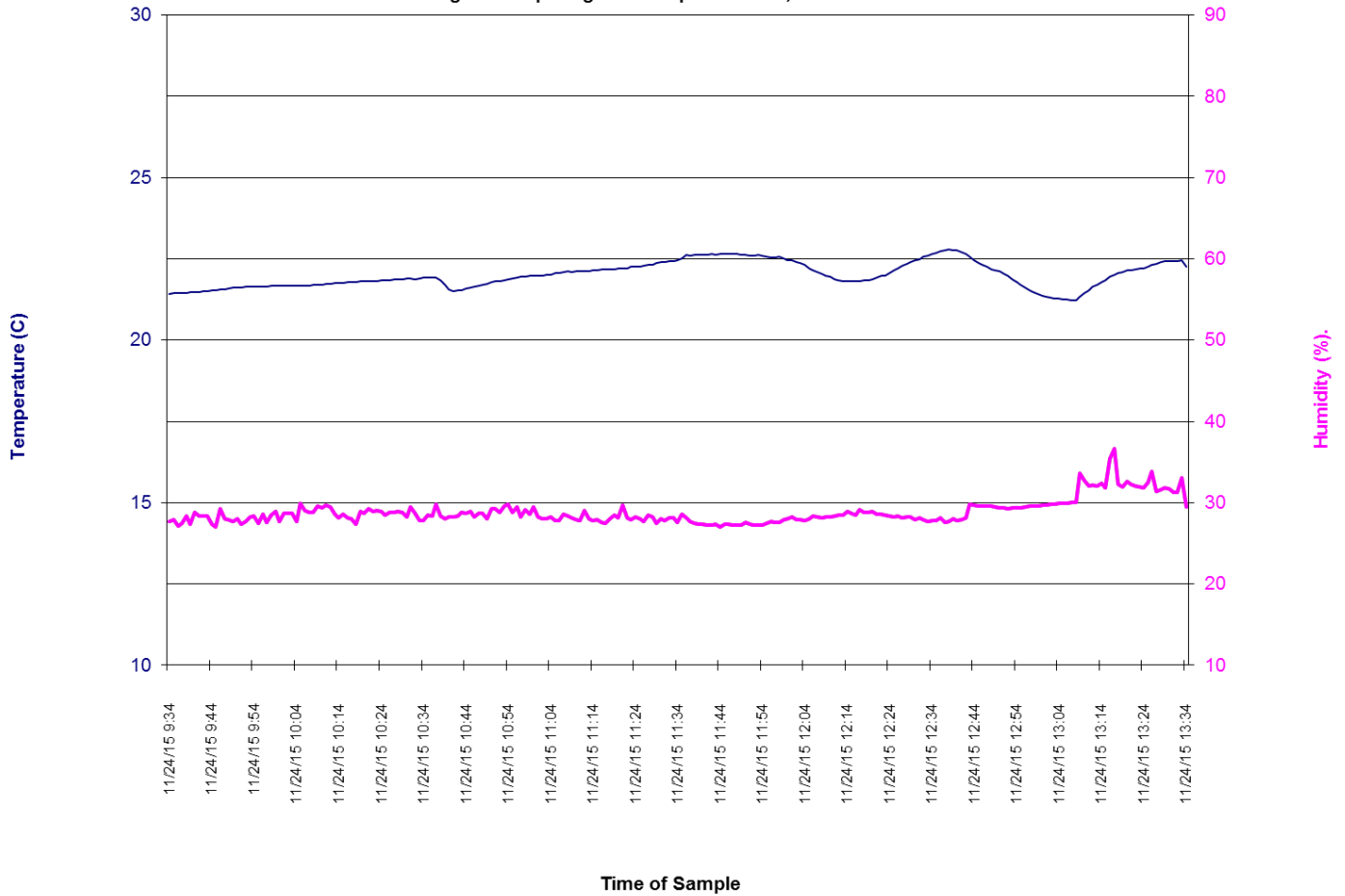
DATA SHEET NO. 13

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2016 Chrysler 300 4-Door Sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20160301
Test Date: 11/24/15

M20160301 2016 Chrysler 300 4-Door Sedan
75 Degree Oblique Rigid Pole Impact 151124; Test Time 13:34



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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25	Post-Test Left Side View of Dummy Shoulder and Door Top View	A-16
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27	Pre-Test Front View of Dummy Head and Shoulders in Relation to Head Restraint	A-17
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30	Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket	A-18
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33	Pre-Test View of Belt Anchorage for Dummy	A-20
34	Pre-Test Left Side View of Steering Wheel	A-20

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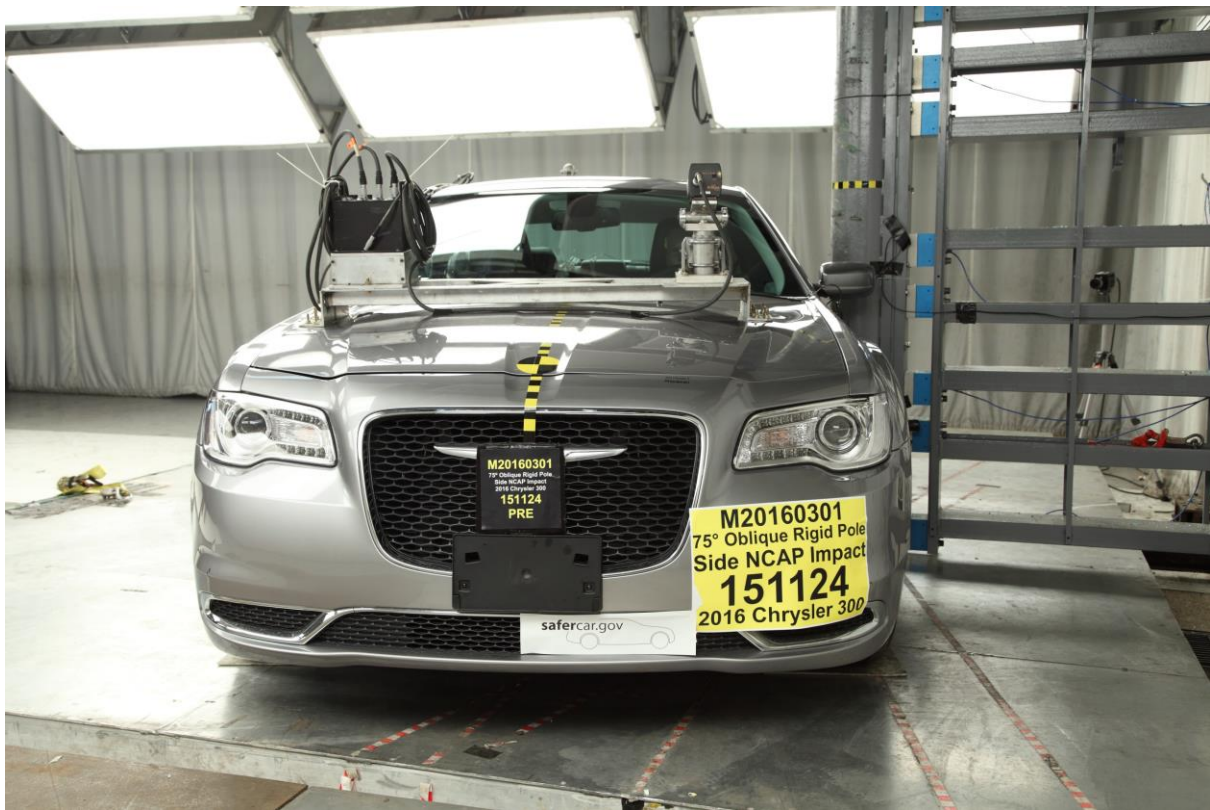
No.	Description	Page
35	Pre-Test View of Disengaged Parking Brake	A-21
36	Pre-Test View of Parking Brake	A-21
37	Pre-Test Close-Up Left Side View of Driver Seat Track	A-22
38	Pre-Test Close-Up Left Side View of Driver Seat Back	A-22
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48	Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View	A-27
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50	Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-28
51	Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View	A-29
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61	Pre-Test Ballast View	A-34
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71	Post-Test View of Shattered Vehicle Inner Door Panel	A-39



001 As Delivered Right Front 3-4 View of Test Vehicle



002 As Delivered Left Rear 3-4 View of Test Vehicle



003 Pre-Test Frontal View of Test Vehicle



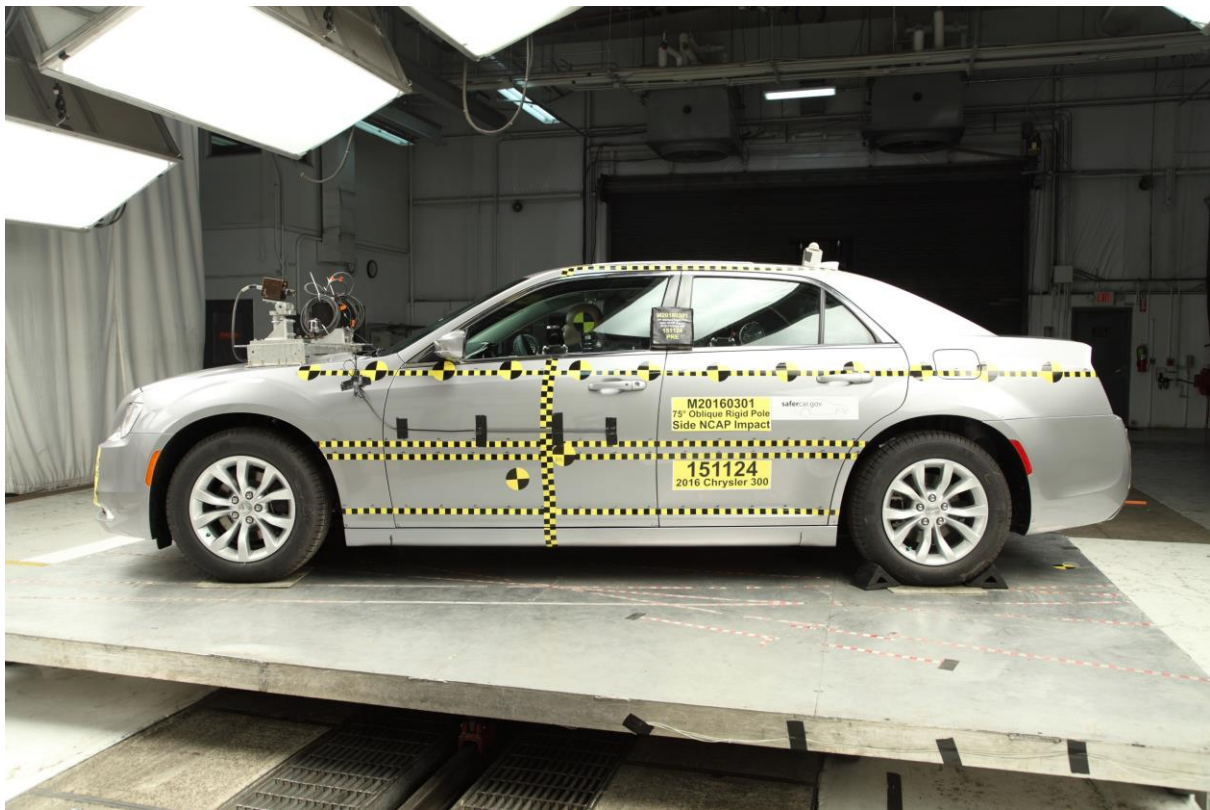
004 Post-Test Frontal View of Test Vehicle



005 Pre-Test Left Front 3-4 View of Test Vehicle



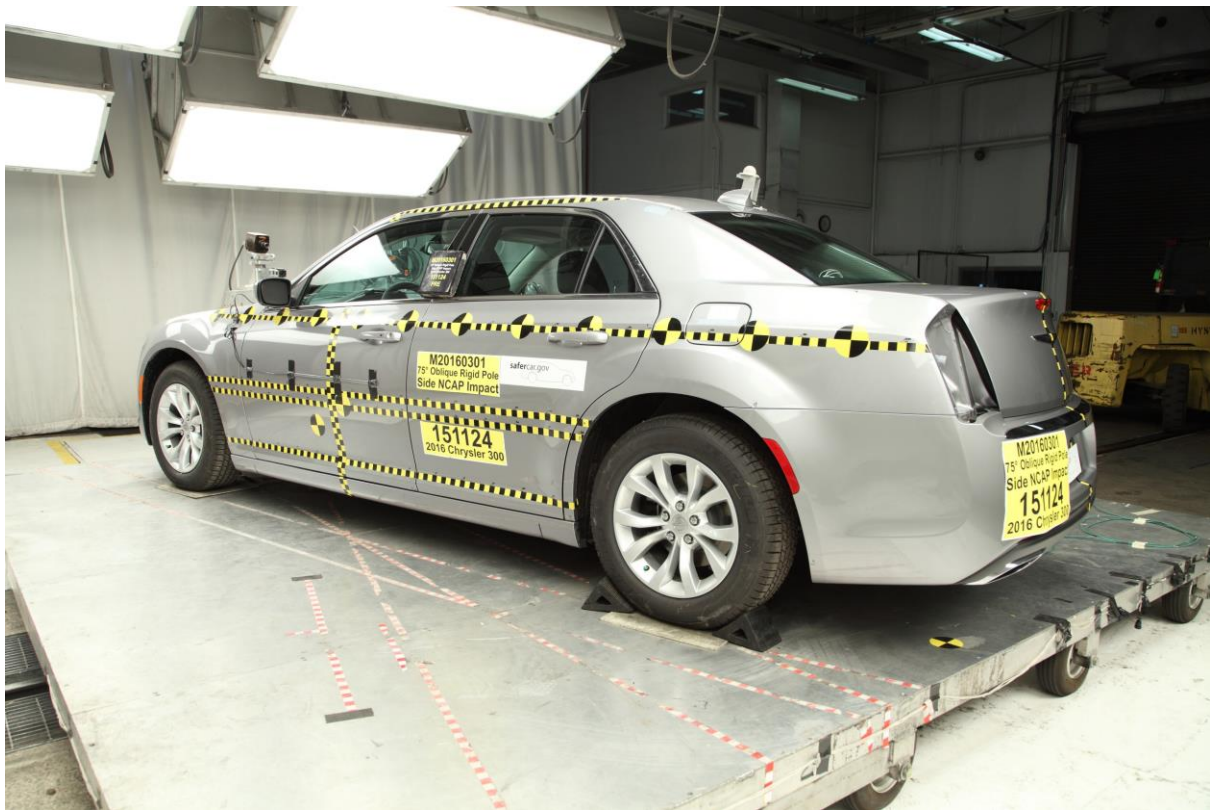
006 Post-Test Left Front 3-4 View of Test Vehicle



007 Pre-Test Left Side View of Test Vehicle



008 Post-Test Left Side View of Test Vehicle



009 Pre-Test Left Rear 3-4 View of Test Vehicle



010 Post-Test Left Rear 3-4 View of Test Vehicle



011 Pre-Test Rear View of Test Vehicle



012 Post-Test Rear View of Test Vehicle



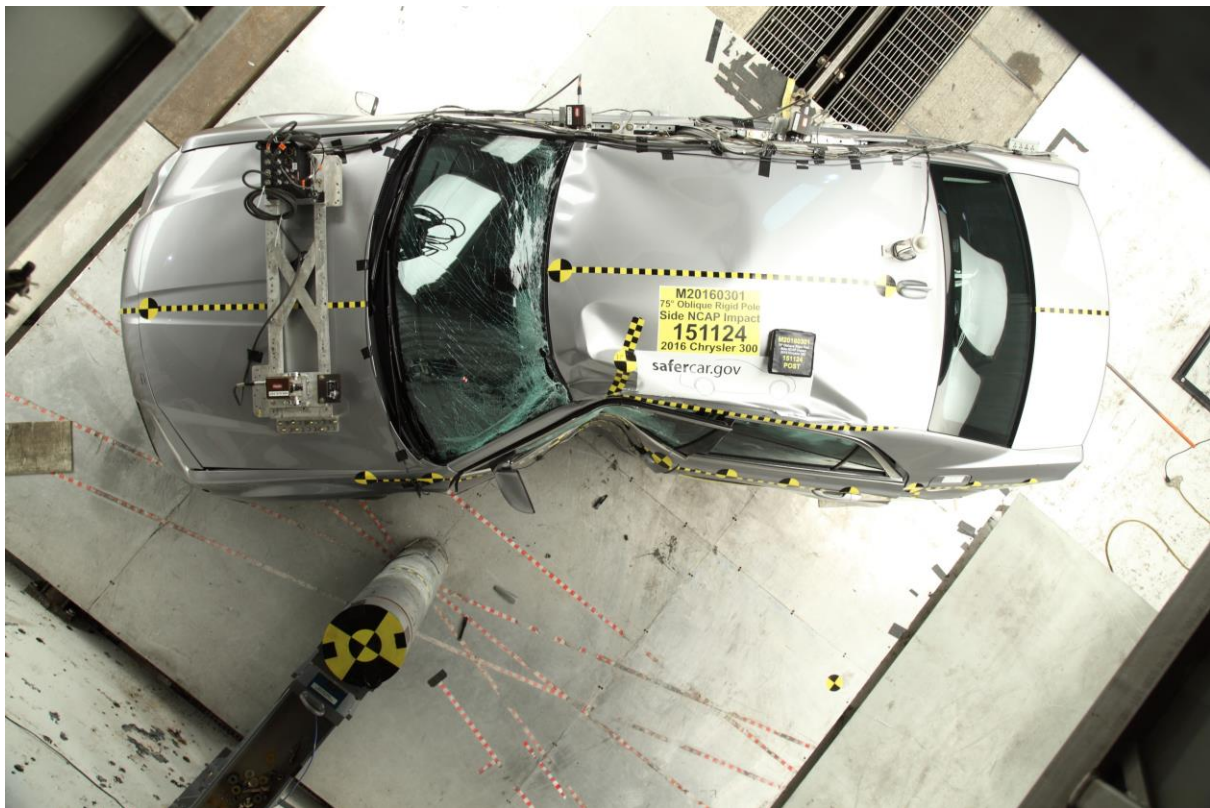
013 Pre-Test Right Side View of Test Vehicle



014 Post-Test Right Side View of Test Vehicle



015 Pre-Test Overhead View of Test Area



016 Post-Test Overhead View of Test Area



017 Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



018 Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



019 Pre-Test Close-Up View of Impact Point Target



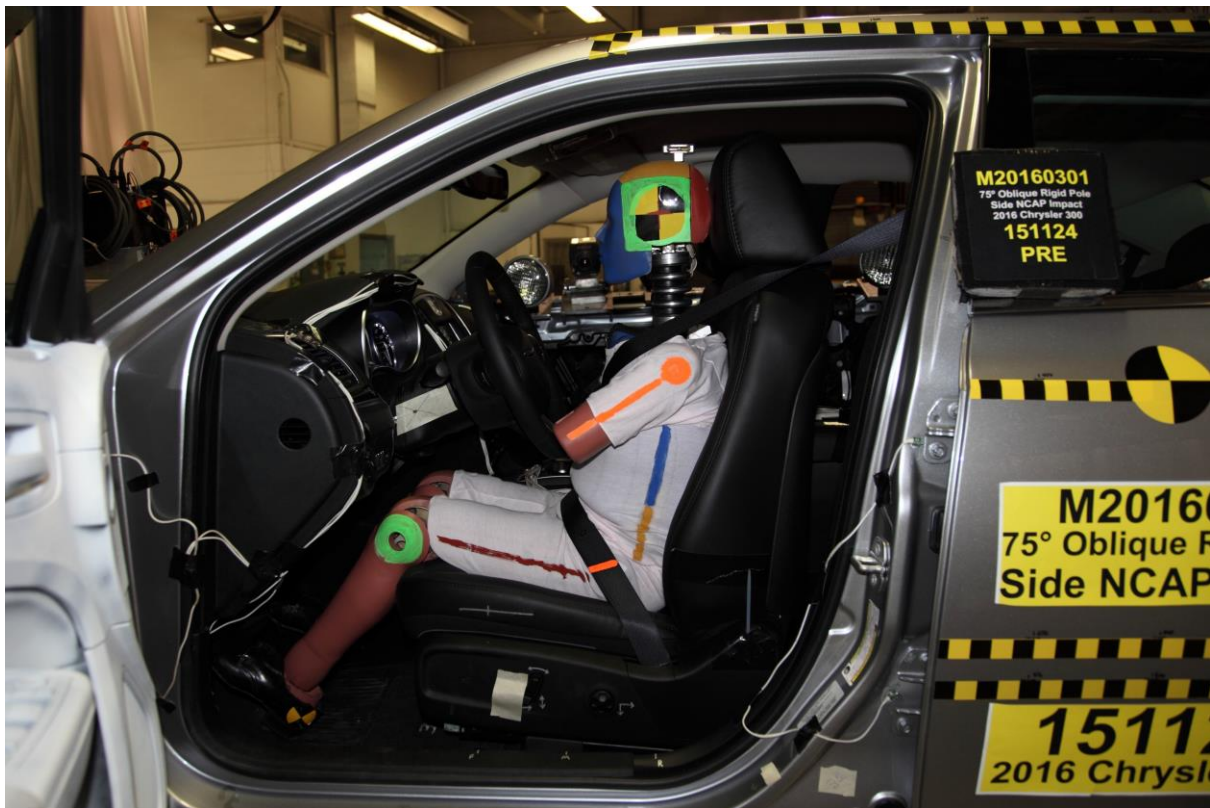
020 Post-Test Close-Up View of Impact Point Target Showing Impact Location



021 Pre-Test Front Close-Up View of Dummy Head and Chest



022 Post-Test Front Close-Up View of Dummy



023 Pre-Test Left Side View of Dummy Showing Belt and Chalking



024 Pre-Test Left Side View of Dummy Shoulder and Door Top View



025 Post-Test Left Side View of Dummy Shoulder and Door Top View



026 Pre-Test Front View of Seat Back Prior to Dummy Positioning



027 Pre-Test Front View of Dummy Head and Shoulders in Relation to Head Restraint



028 Pre-Test Front View of Seat Pan Prior to Dummy Positioning



029 Pre-Test Overhead View of Dummy Thighs on Seat Pan



030 Pre-Test Left Side View of Dummy Neck Showing Position of Adjustable Neck Bracket



031 Pre-Test Left Side View of Dummy Head Showing Dummy Head is Level



032 Pre-Test Placement of Dummy Feet



033 Pre-Test View of Belt Anchorage for Dummy



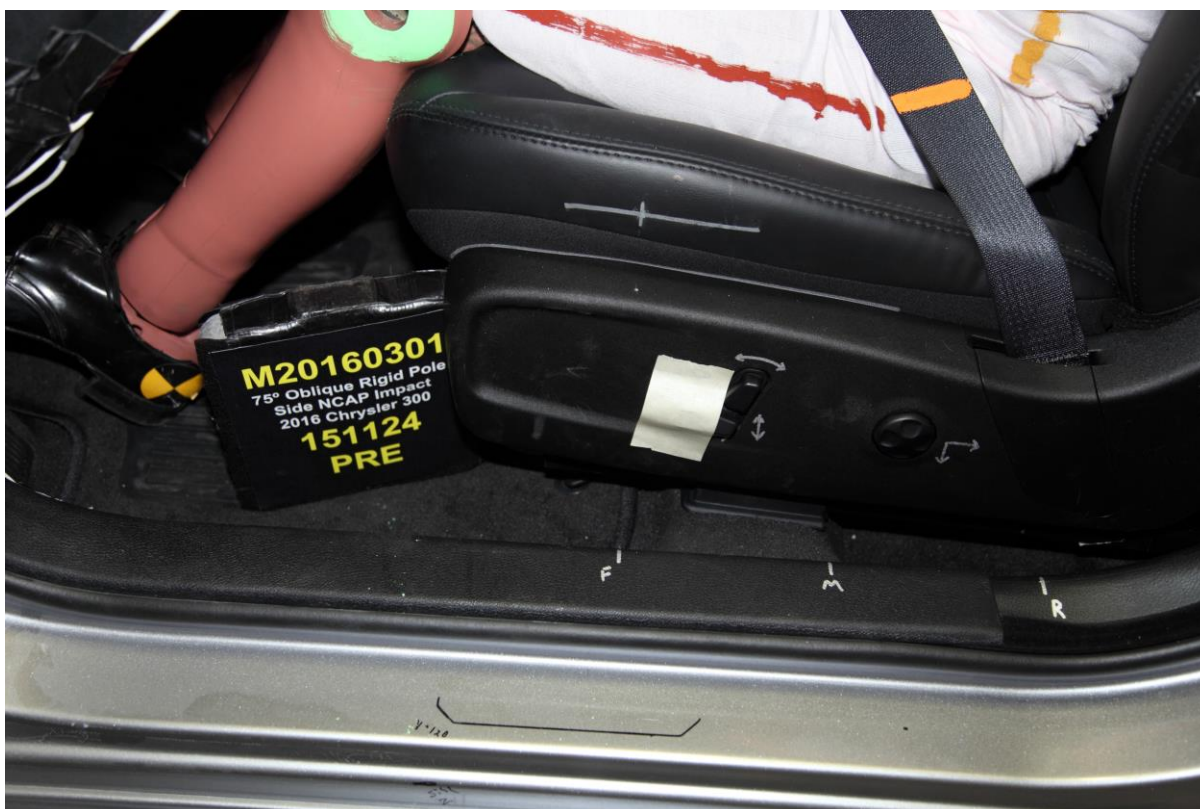
034 Pre-Test Left Side View of Steering Wheel



035 Pre-Test View of Disengaged Parking Brake



036 Pre-Test View of Parking Brake



037 Pre-Test Close-Up Left Side View of Driver Seat Track



038 Pre-Test Close-Up Left Side View of Driver Seat Back



039 Pre-Test Close-Up View of Driver Seat Back or Head Restraint



040 Pre-Test Dummy and Door Clearance View



041 Post-Test Dummy and Door Clearance View



042 Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



043 Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



044 Pre-Test Inner Driver Door Panel View



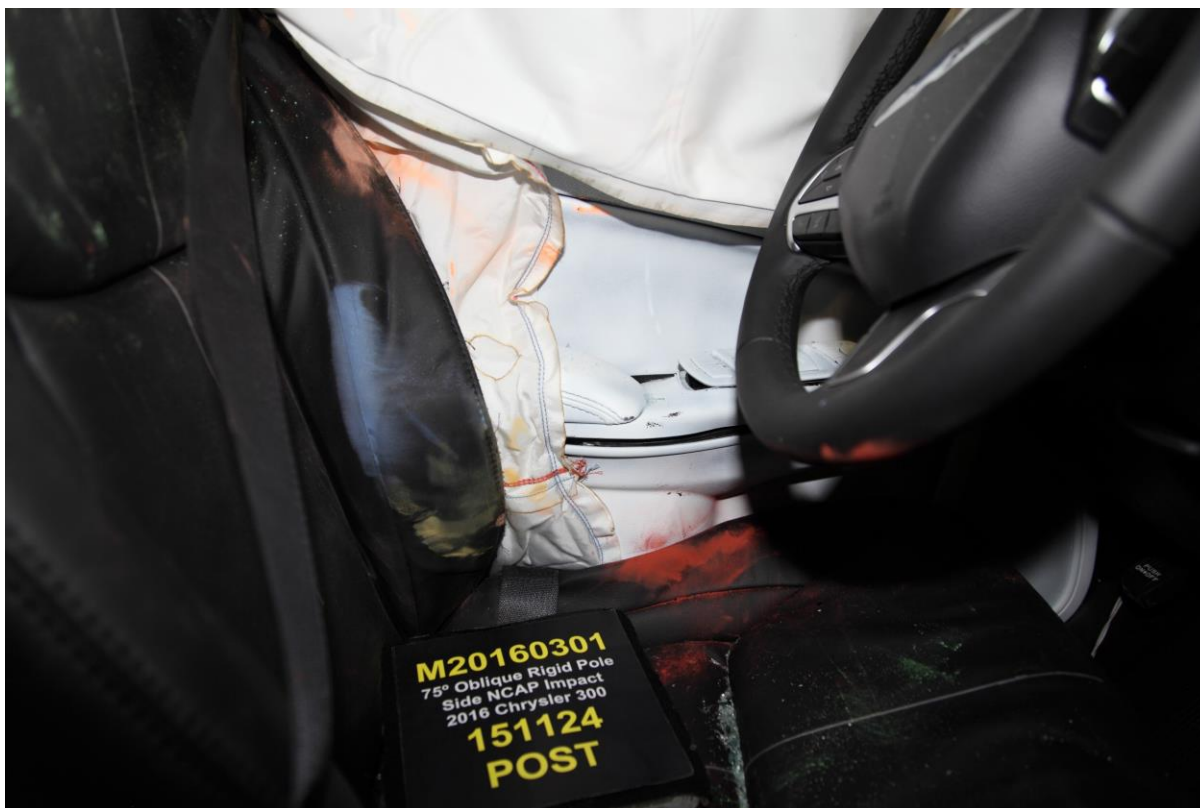
045 Post-Test Inner Driver Door Panel View Showing Dummy Contact Location



046 Post-Test Dummy Close-Up Head Contact with Vehicle View



047 Post-Test Dummy Close-Up Head Contact with Side Airbag View



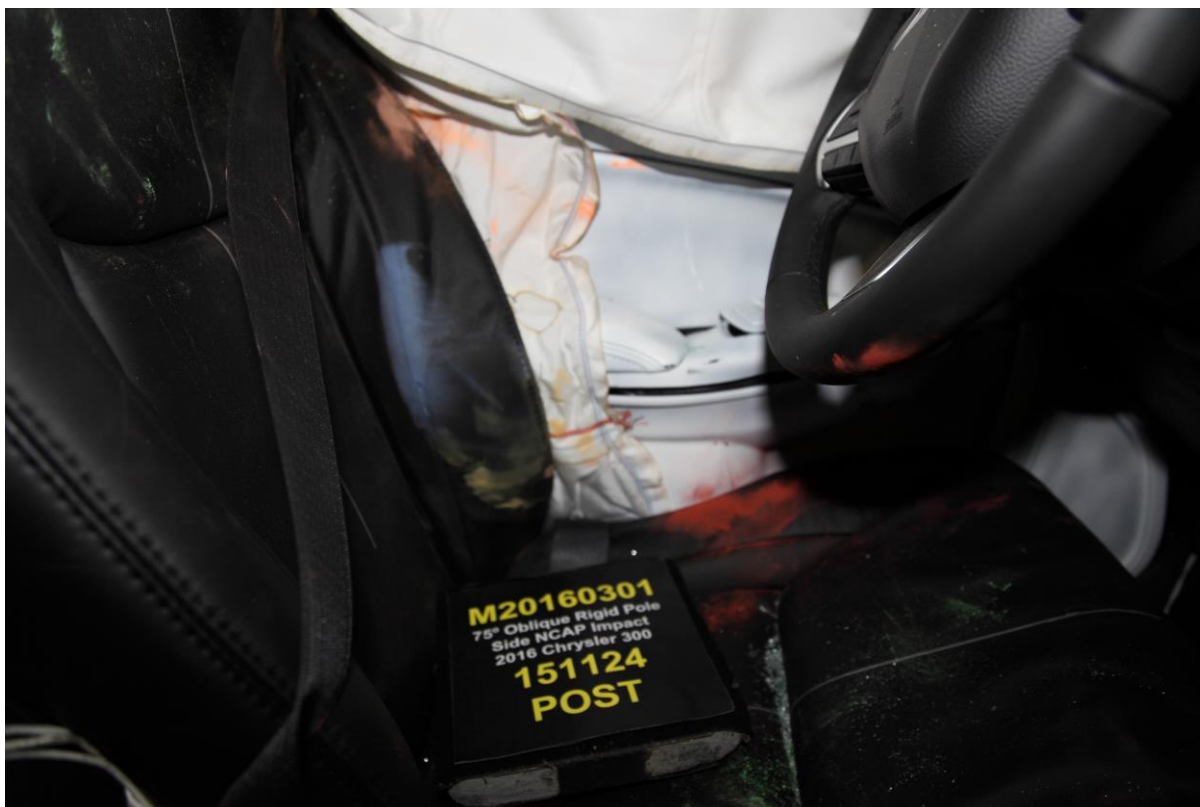
048 Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



049 Post-Test Dummy Close-Up Torso Contact with Side Airbag View



050 Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



051 Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



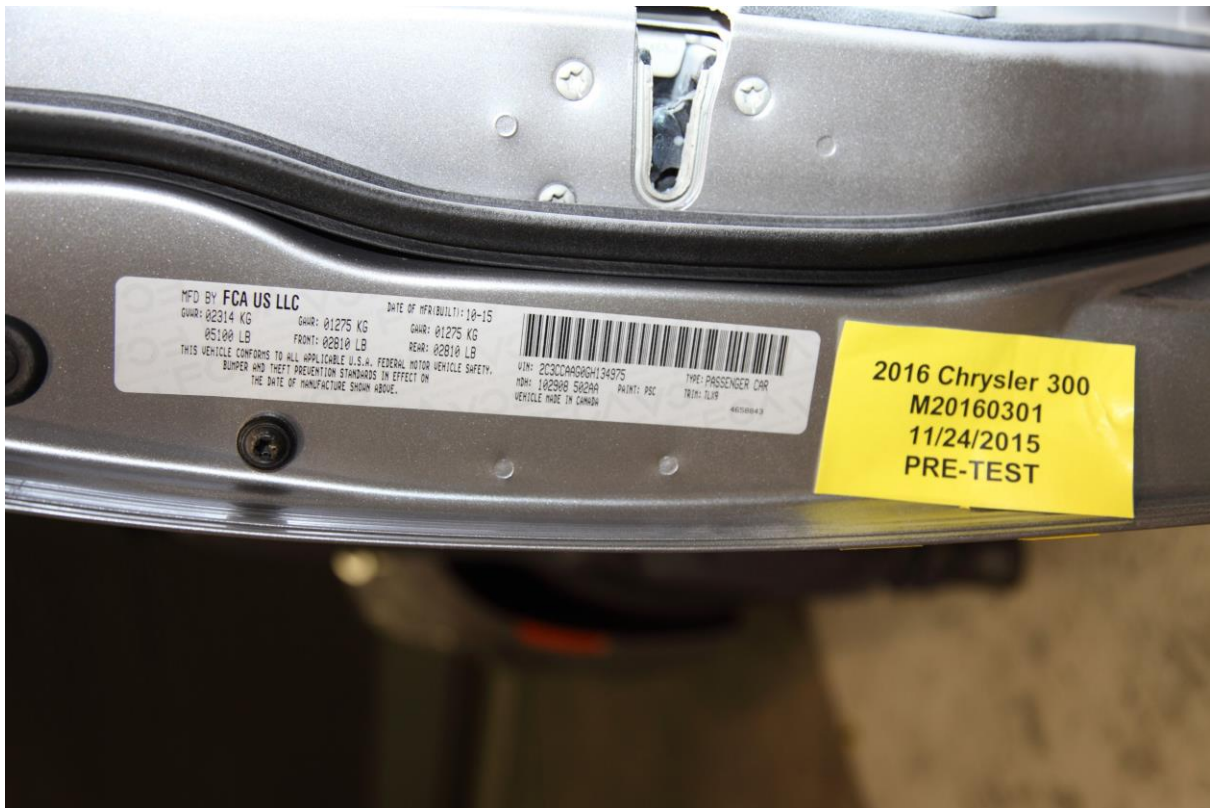
052 Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



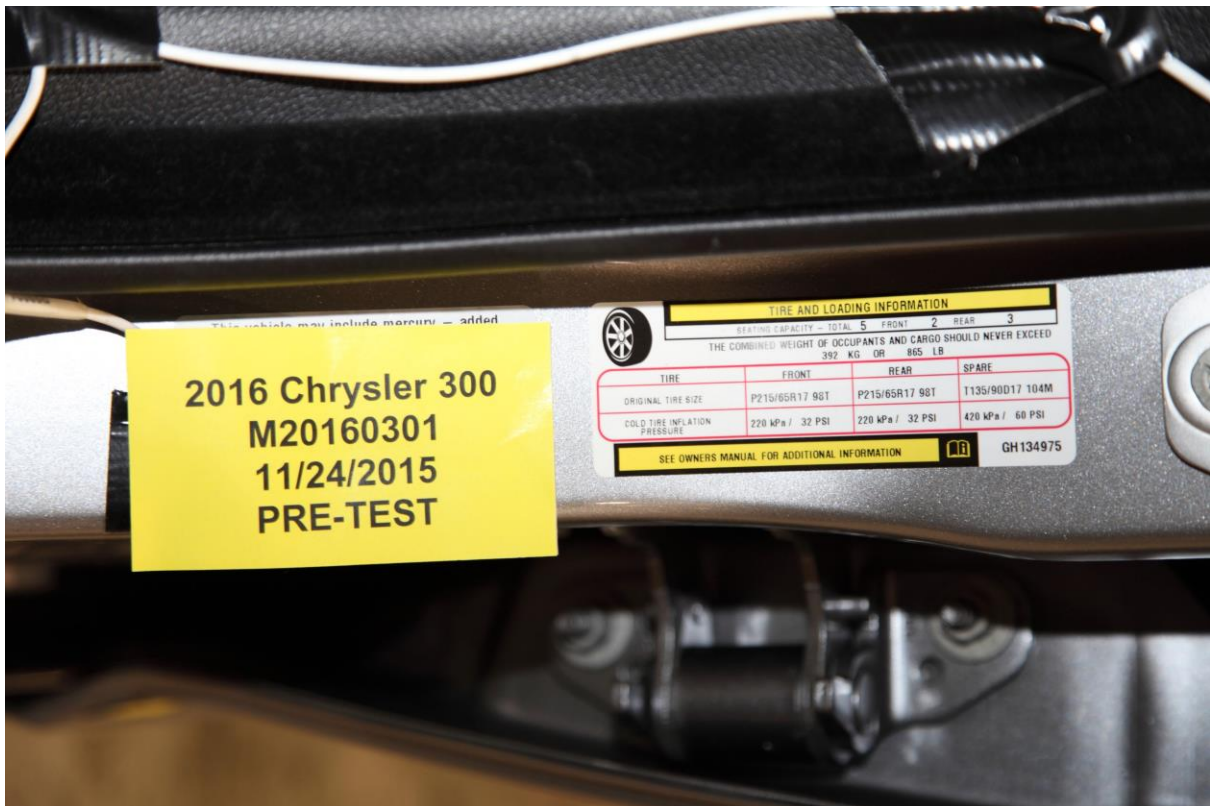
053 Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



054 Post-Test View of Fuel Filler Cap or Fuel Filler Neck



055 Close-Up View of Vehicle Certification Label



056 Close-Up View of Vehicle Tire Information Placard or Label



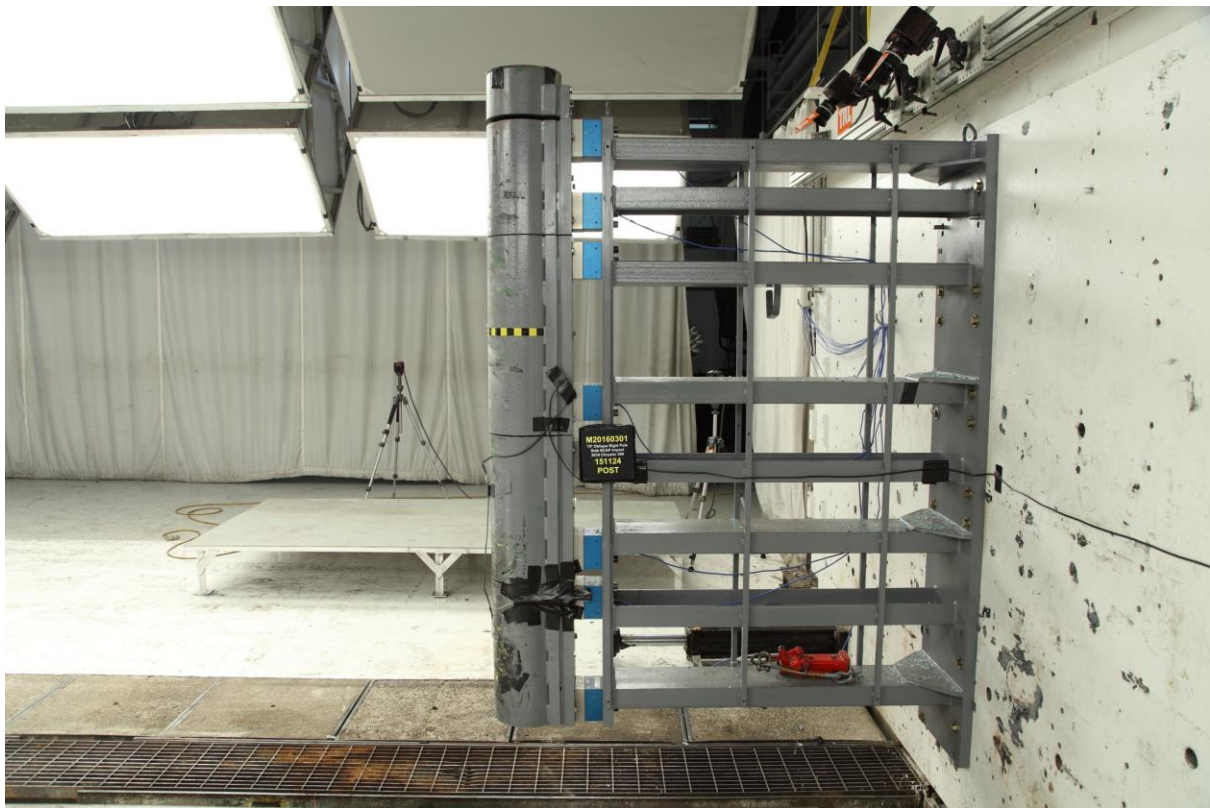
057 Pre-Test Pole Barrier Front View



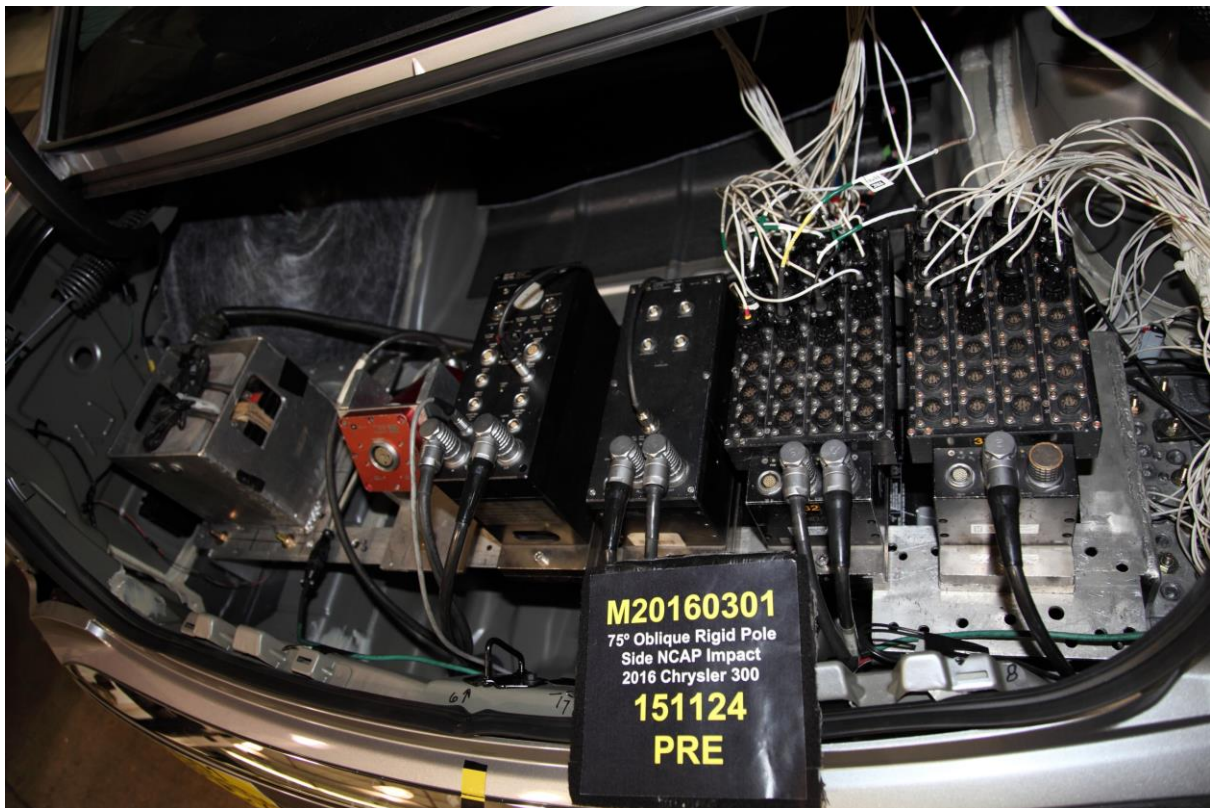
058 Post-Test Pole Barrier Front View



059 Pre-Test Pole Barrier Side View



060 Post-Test Pole Barrier Side View



061 Pre-Test Ballast View



062 Post-Test Primary and Redundant Speed Trap Read-Out



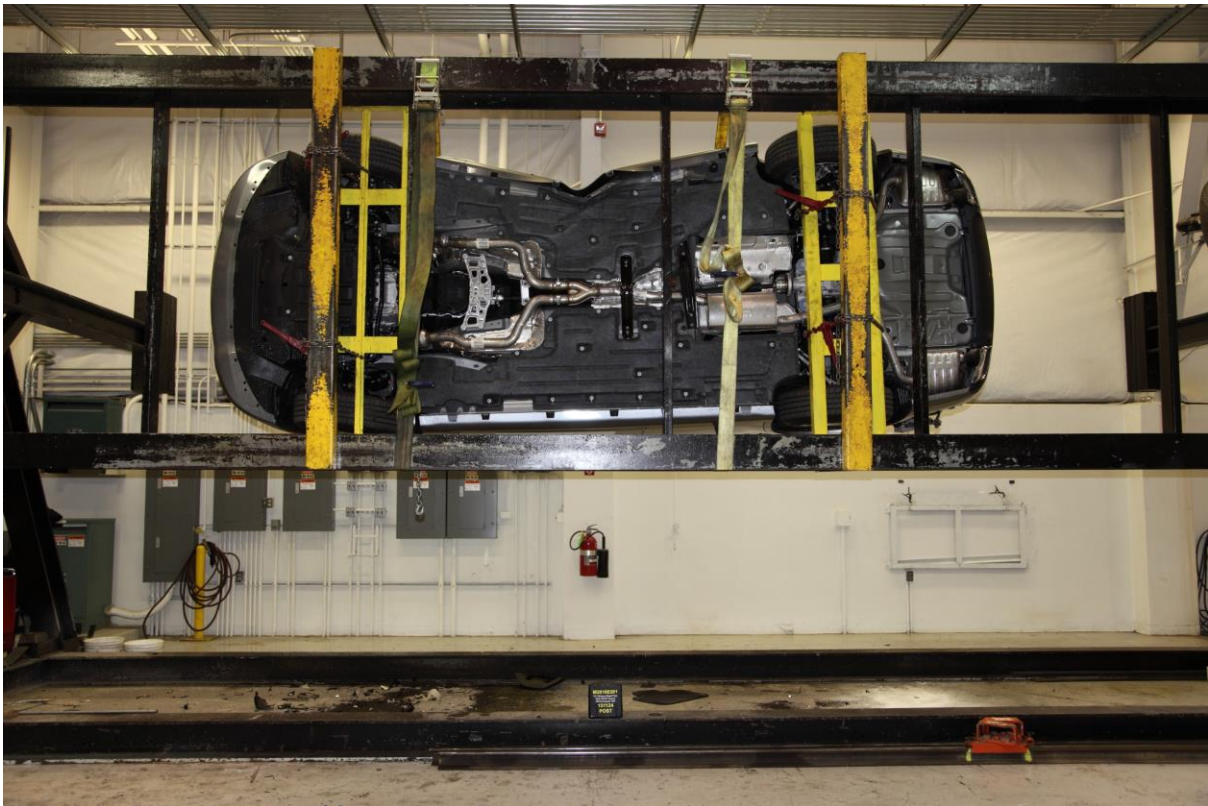
063 FMVSS No. 301 Static Rollover 0 Degrees



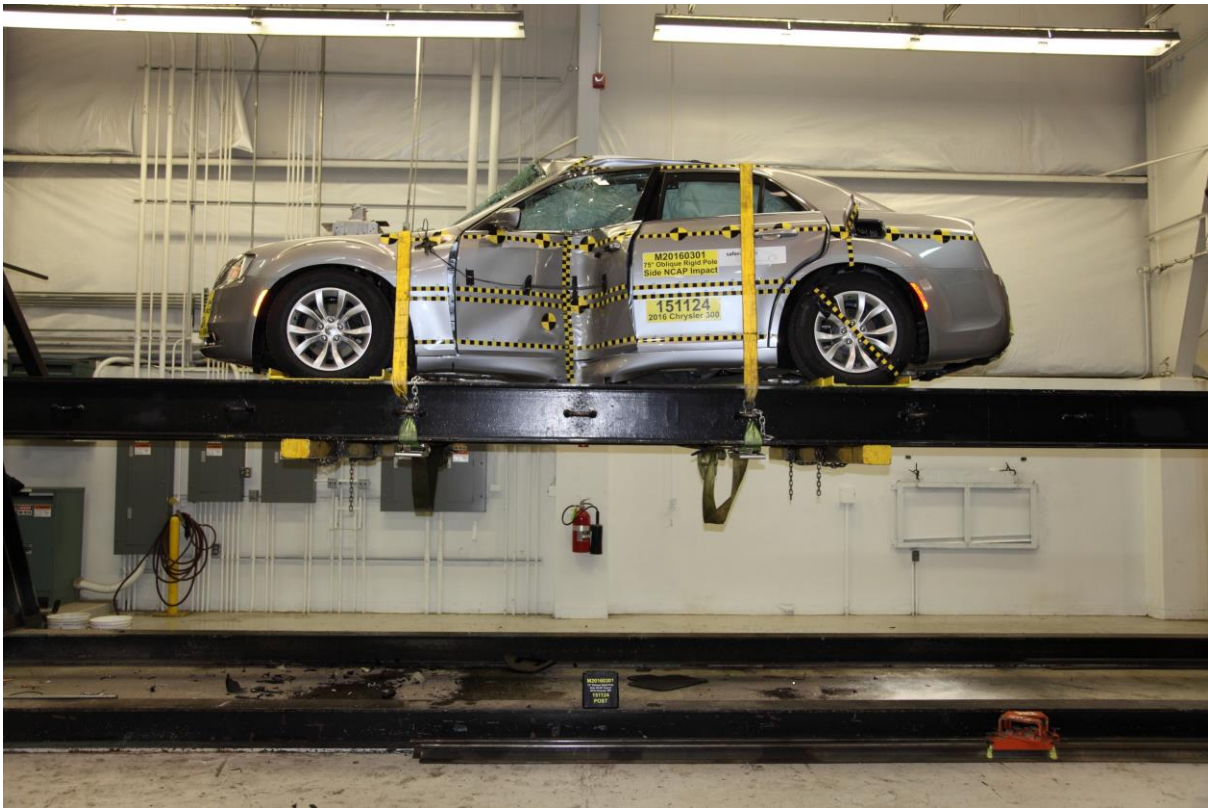
064 FMVSS No. 301 Static Rollover 90 Degrees



065 FMVSS No. 301 Static Rollover 180 Degrees



066 FMVSS No. 301 Static Rollover 270 Degrees



067 FMVSS No. 301 Static Rollover 360 Degrees



068 Impact Event

069 Monroney Label

070 Head Restraint Use and Adjustment Information from Vehicle Owner Manual

PHOTO NOT APPLICABLE

071 Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

No.	Description	Page
1	Driver Head Acceleration (X) vs. Time	B-4
2	Driver Head Acceleration (Y) vs. Time	B-4
3	Driver Head Acceleration (Z) vs. Time	B-4
4	Driver Head Acceleration Resultant vs. Time	B-4
5	Driver Lower Spine T12 Acceleration (X) vs. Time	B-5
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-5
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-5
8	Driver Lower Spine T12 Acceleration Resultant vs. Time	B-5
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-6
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-6
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-6

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at:

www.nhtsa.dot.gov.

Additional Driver Dummy Instrumentation Data

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

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration (Y)
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

Pole Instrumentation Data

Load Cell Pole Barrier #1 Force (X)
Load Cell Pole Barrier #2 Force (X)
Load Cell Pole Barrier #3 Force (X)
Load Cell Pole Barrier #4 Force (X)
Load Cell Pole Barrier #5 Force (X)
Load Cell Pole Barrier #6 Force (X)
Load Cell Pole Barrier #7 Force (X)
Load Cell Pole Barrier #8 Force (X)

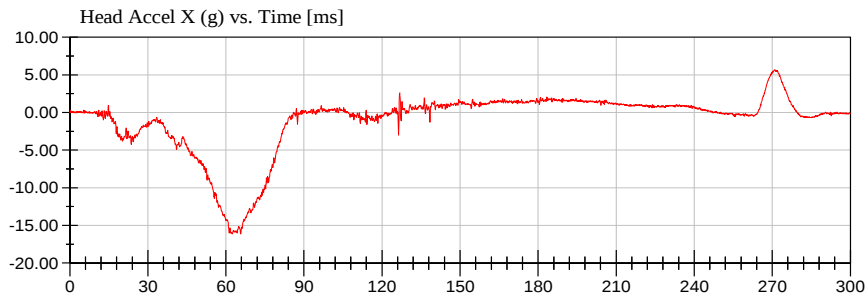
NHTSA

Test Lab: CTF

Test Number: 151124 (M20160301)

Position #1 SID IIs Dummy (DI8818)

Test Date: 11/24/2015

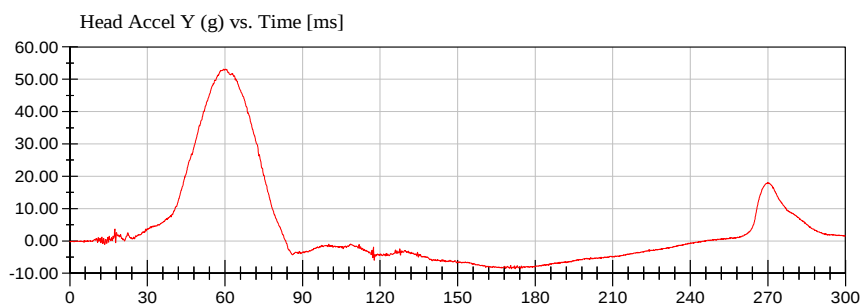


<Max>

5.69 g at 270.88 ms

<Min>

-16.13 g at 62.40 ms

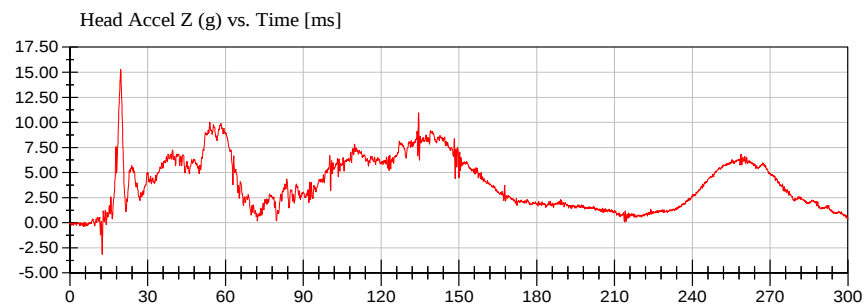


<Max>

53.15 g at 59.52 ms

<Min>

-8.64 g at 170.80 ms

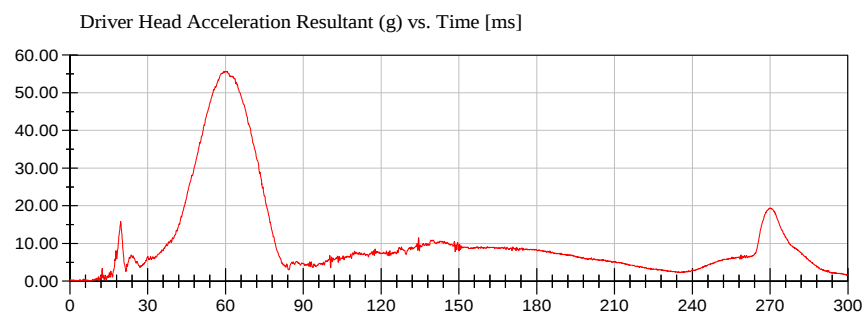


<Max>

15.27 g at 19.60 ms

<Min>

-3.17 g at 12.48 ms



<Max>

55.71 g at 60.16 ms

<Min>

0.03 g at 5.84 ms



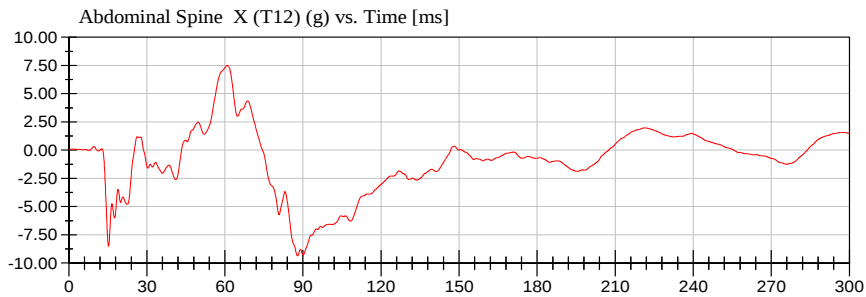
NHTSA

Test Lab: CTF

Test Number: 151124 (M20160301)

Position #1 SID IIs Dummy (DI8818)

Test Date: 11/24/2015



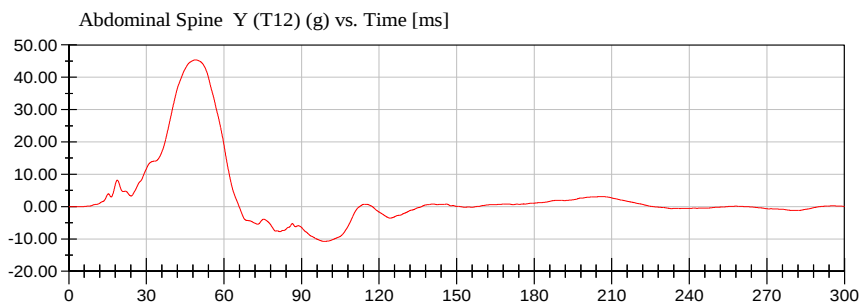
<Max>

7.51 g at 60.96 ms

<Min>

-9.36 g at 87.92 ms

CFC_180



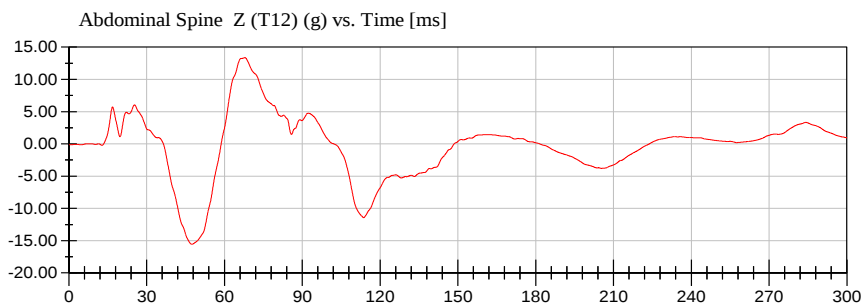
<Max>

45.37 g at 48.96 ms

<Min>

-10.78 g at 98.96 ms

CFC_180



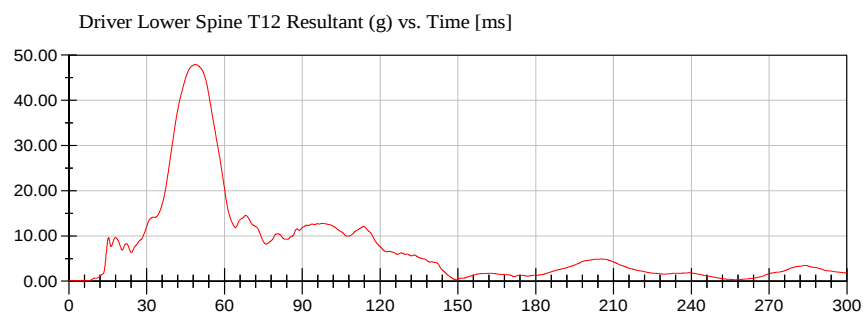
<Max>

13.36 g at 67.92 ms

<Min>

-15.56 g at 47.44 ms

CFC_180



<Max>

47.92 g at 48.80 ms

<Min>

0.07 g at 6.00 ms

CFC_180



NHTSA

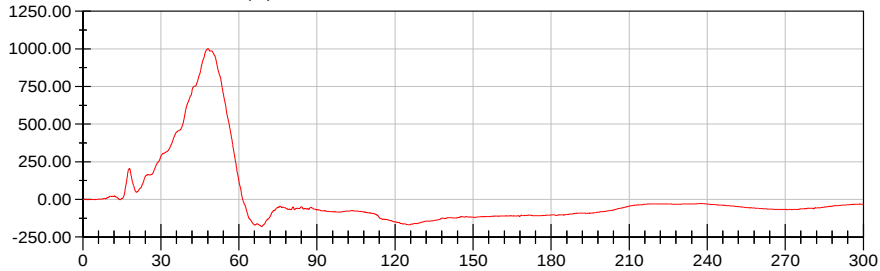
Test Lab: CTF

Test Number: 151124 (M20160301)

Position #1 SID IIs Dummy (DI8818)

Test Date: 11/24/2015

Left Iliac Force Y (N) vs. Time [ms]



<Max>

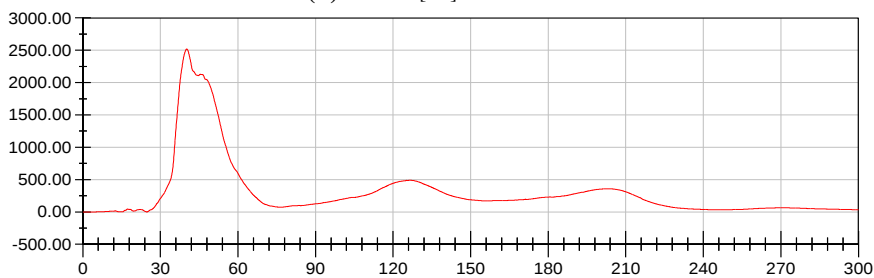
1,001.77 N at 48.08 ms

<Min>

-180.33 N at 68.72 ms

CFC_600

Left Acetabulum Force Y (N) vs. Time [ms]



<Max>

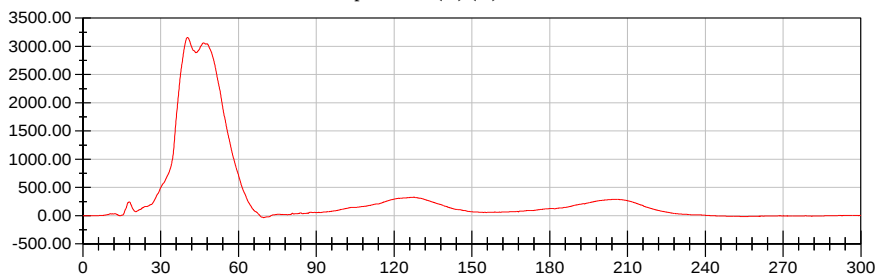
2,518.86 N at 40.24 ms

<Min>

-0.70 N at 1.28 ms

CFC_600

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



<Max>

3,157.40 N at 40.32 ms

<Min>

-33.58 N at 69.76 ms

CFC_600



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS
SID-IIs (Driver) Dummy
Description

Table 1. External Measurements

Table 2. Head Drop Test

Resultant Head Acceleration (G's) vs. Time (ms)
Head (X) Acceleration (G's) vs. Time (ms)
Head (Y) Acceleration (G's) vs. Time (ms)
Head (Z) Acceleration (G's) vs. Time (ms)

Table 3. Lateral Neck Pendulum Test

Pendulum Velocity (m/s) vs. Time (ms)
Flexion Angle (°) vs. Time (ms)
Moment About Occipital Condyle (Nm) vs. Time (ms)

Table 4. Shoulder Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Shoulder Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)

Table 5. Thorax (With Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Shoulder Displacement (mm) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 6. Thorax (Without Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 7. Abdomen Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Upper Abdominal Rib Displacement (mm) vs. Time (ms)
Lower Abdominal Rib Displacement (mm) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 8. Pelvis Plug Quasi-Static Test (Optional*)

Table 9. Pelvis Acetabulum Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Acetabulum Force (N) vs. Time (ms)

Table 10. Pelvis Iliac Impact Test

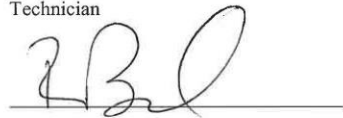
Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Iliac Force (N) vs. Time (ms)

Pre-Test Calibration Sheets
Driver S/N DI8818

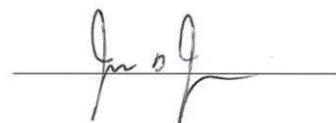
Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DI8818 Calibration No.18

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	780	Yes
B	Shoulder Pivot Height	437.0 - 453.0	440	Yes
C	H-Point Height	79.0 - 89.0	84	Yes
D	H-Point from Seat Back	141.0 - 151.0	144	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	100	Yes
F	Thigh Clearance	119.0 - 135.0	130	Yes
G	Head Breadth	140.0 - 148.0	143	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	182	Yes
J	Head Circumference	541.0 - 551.0	544	Yes
K	Buttock to Knee Length	514.0 - 540.0	534	Yes
L	Popliteal Height	343.0 - 369.0	352	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	400	Yes
N	Buttock Popliteal Length	416.0 - 442.0	427	Yes
O	Chest Depth without Jacket	195.0 - 211.0	202	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	255	Yes
S	Knee Joint to seat Back	478.0 - 493.0	485	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	867	Yes
Z	Waist Circumference	761.0 - 791.0	775	Yes

Technician



Approved



Revised 9/29/2005



Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 18-2

Test Date: 10/26/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	131.5 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	3.4 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.

10.26.2015 09:20:51 234

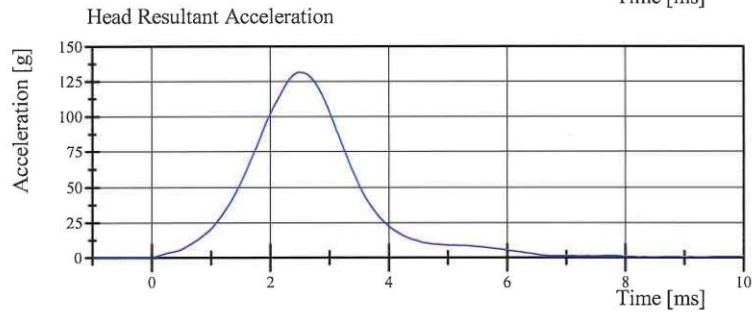
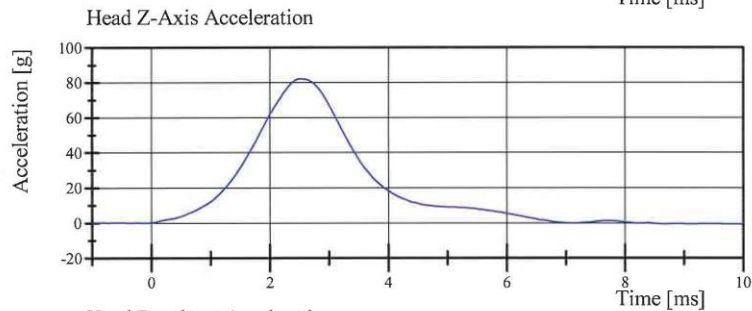
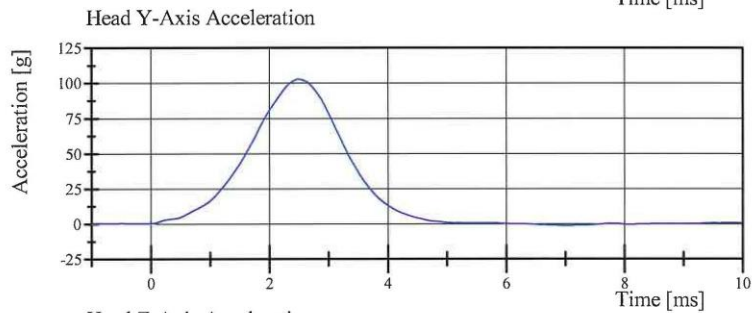
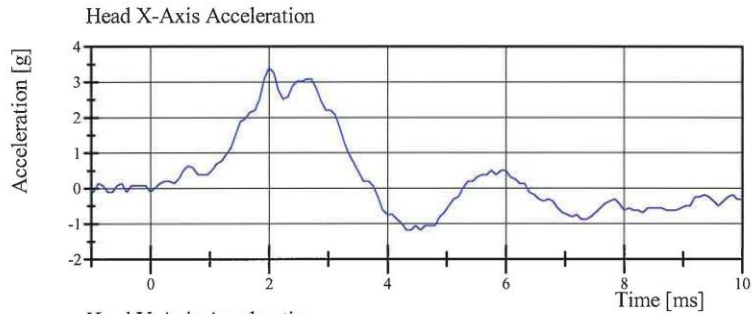


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 18-2

Test Date: 10/26/2015



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

10.26.2015 09:20:58 234



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 18-1

Test Date: 10/23/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.591 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.615 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.814 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	5.116 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.851 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.857 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-76.1 deg	Yes
Time of Peak	50 - 70 ms	64.8 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	41.7 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	117.2 ms	Yes

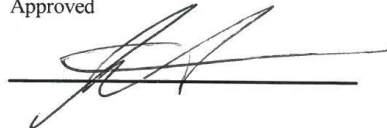
Test meets specifications.

Comments:

Technician



Approved



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

10.23.2015 10:50:16 642

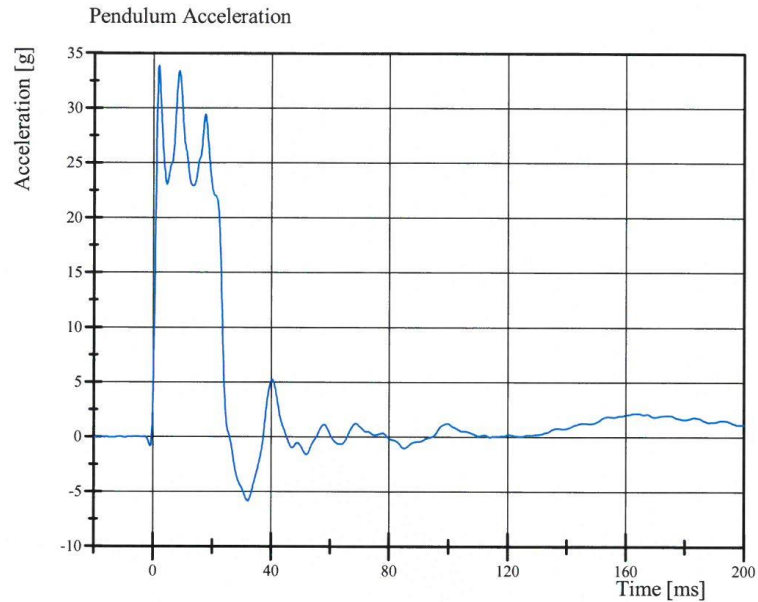


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 18-1

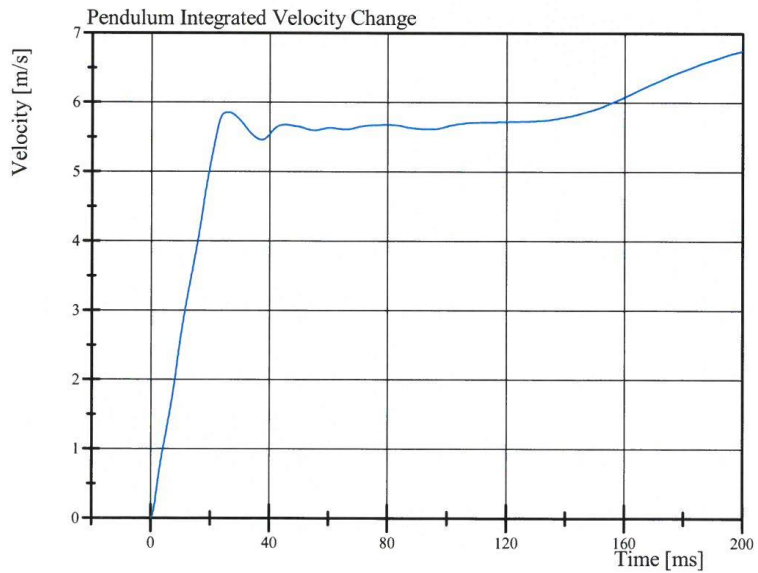
Test Date: 10/23/2015



Filter Class: CFC_180

Max: 33.9 g at 1.8 ms

Min: -5.8 g at 32.2 ms



Filter Class: CFC_180

Max: 6.7 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.

10.23.2015 10:50:24 642

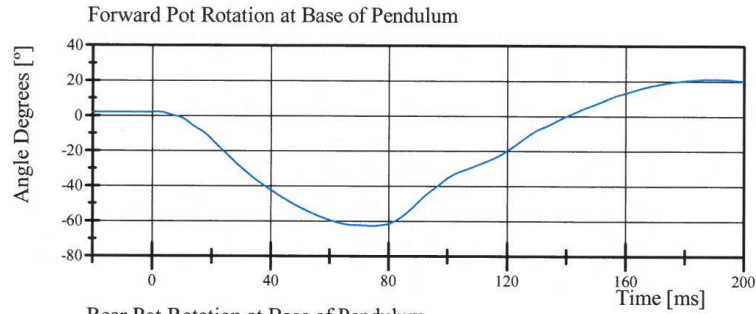


Transportation Research Center Inc.

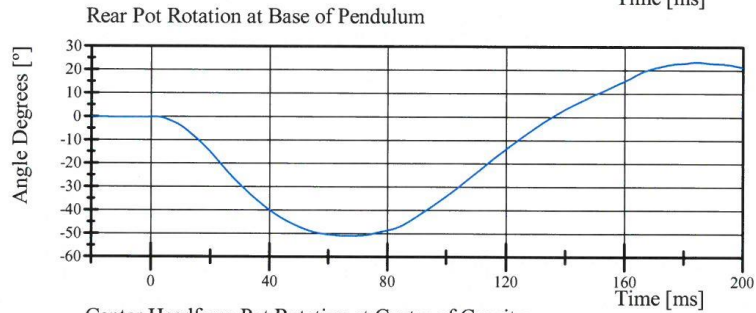
Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 18-1

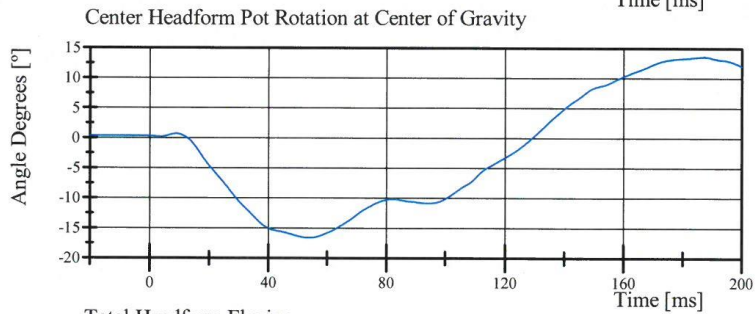
Test Date: 10/23/2015



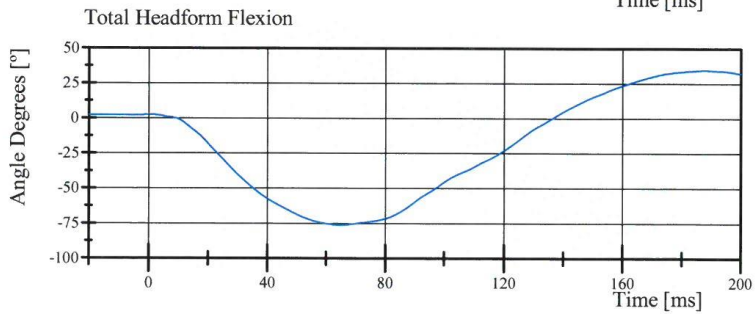
Filter Class: CFC_60
Max: 21.1 ° at 189.1 ms
Min: -62.6 ° at 74.6 ms



Filter Class: CFC_60
Max: 23.5 ° at 184.5 ms
Min: -51.0 ° at 66.6 ms



Filter Class: CFC_60
Max: 13.6 ° at 187.4 ms
Min: -16.6 ° at 53.9 ms



Filter Class: CFC_60
Max: 34.6 ° at 187.8 ms
Min: -76.1 ° at 64.8 ms

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

10.23.2015 10:50:25 642

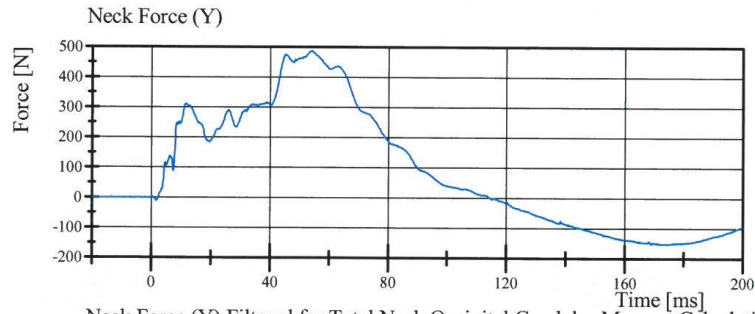


Transportation Research Center Inc.

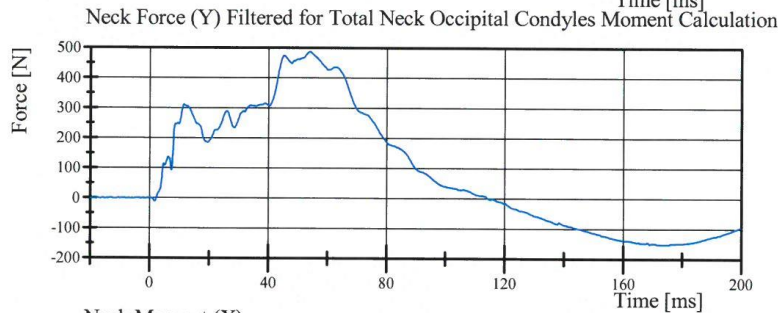
Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 18-1

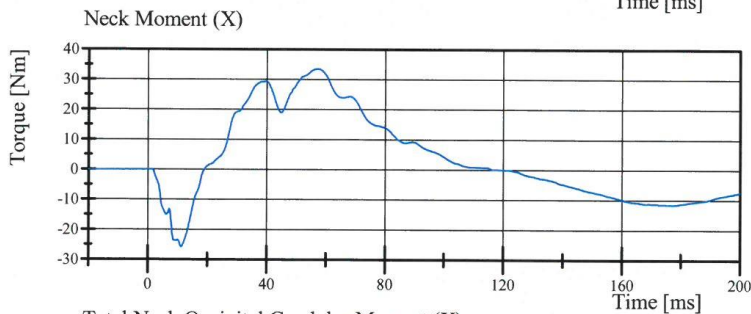
Test Date: 10/23/2015



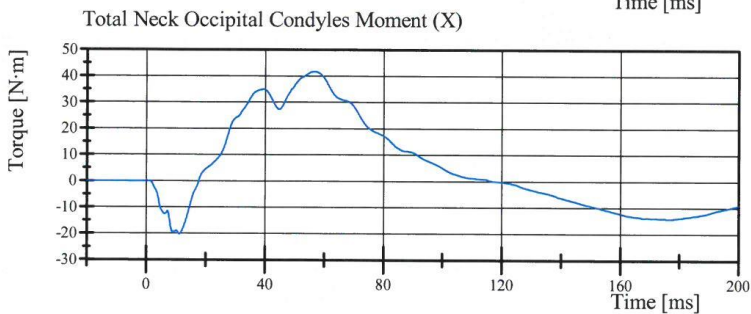
Filter Class: CFC_1000
Max: 487.9 N at 54.1 ms
Min: -152.1 N at 168.9 ms



Filter Class: CFC_600
Max: 487.3 N at 54.1 ms
Min: -151.6 N at 174.5 ms



Filter Class: CFC_600
Max: 33.5 Nm at 57.1 ms
Min: -25.7 Nm at 11.2 ms



Filter Class: Without_Constant
Max: 41.7 N·m at 56.9 ms
Min: -20.3 N·m at 11.1 ms

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

10.23.2015 10:50:25 642



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 18-1

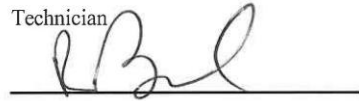
Test Date: 10/23/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.30 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.7 g	Yes
Shoulder Displacement	28 - 37 mm	32.8 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.5 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.

10.23.2015 13:24:20 827

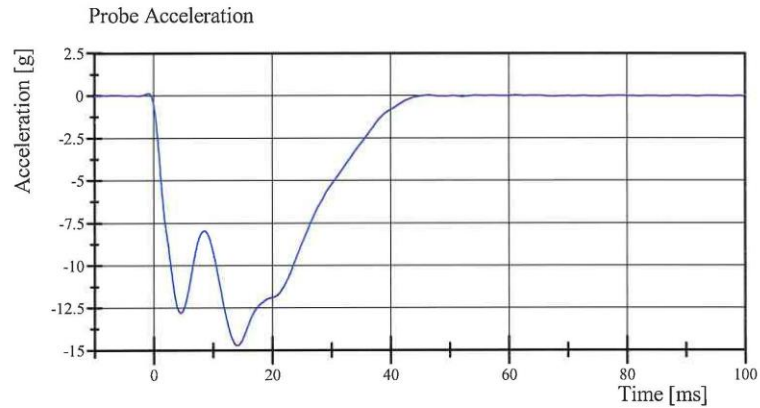


Transportation Research Center Inc.

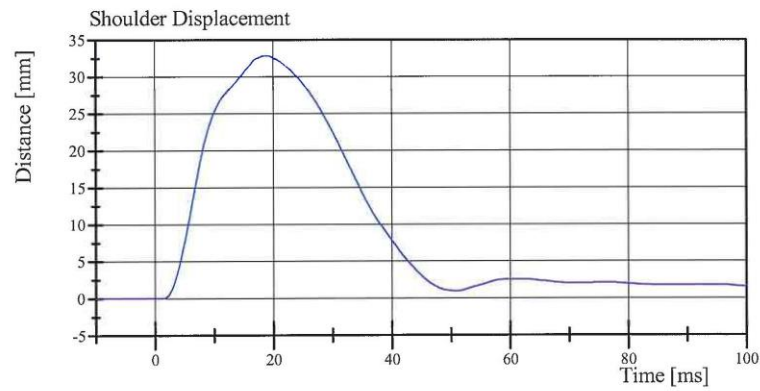
Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 18-1

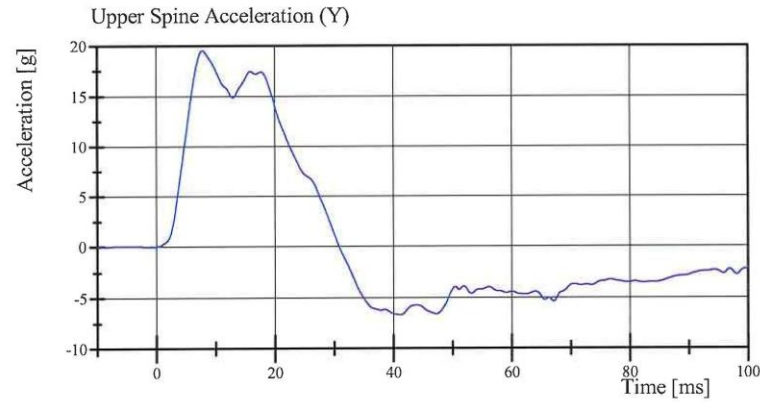
Test Date: 10/23/2015



Filter Class: CFC_180
Max: 0.1 g at -0.9 ms
Min: -14.7 g at 14.2 ms



Filter Class: CFC_600
Max: 32.8 mm at 18.8 ms
Min: -0.0 mm at 1.1 ms



Filter Class: CFC_180
Max: 19.5 g at 7.8 ms
Min: -6.7 g at 41.1 ms

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

10.23.2015 13:24:28 827



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 18-1
Test Date: 10/23/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.736 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-32.3 g	Yes
Shoulder Displacement	31 - 40 mm	37.3 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	29.5 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	32.3 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.4 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.5 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.2 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.

10.23.2015 15:03:27 602

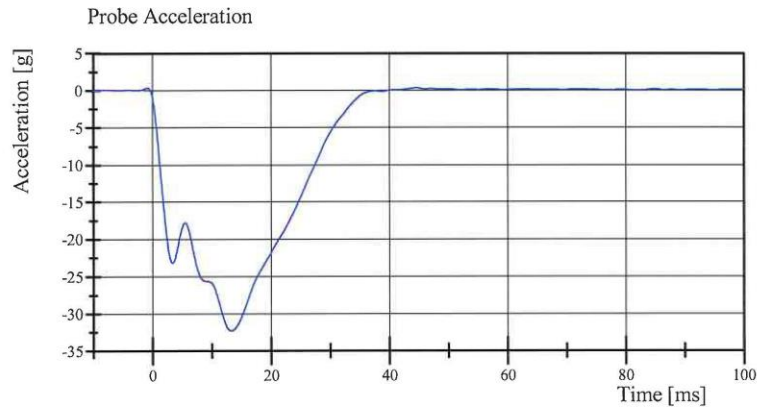


Transportation Research Center Inc.

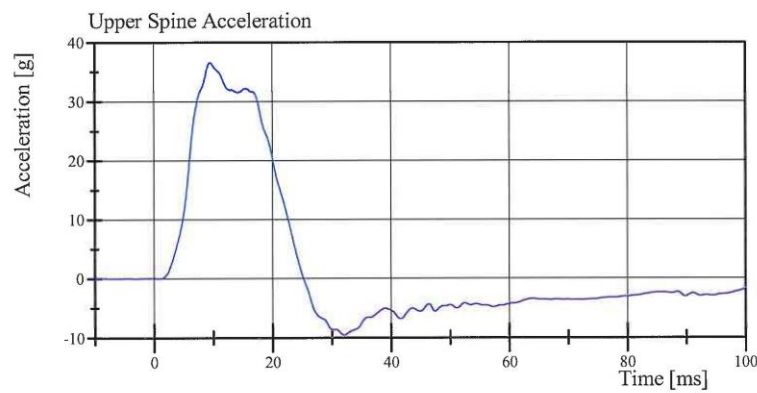
Left Lateral Thorax with Arm

SID IIs Serial No. DI8818 Certification No. 18-1

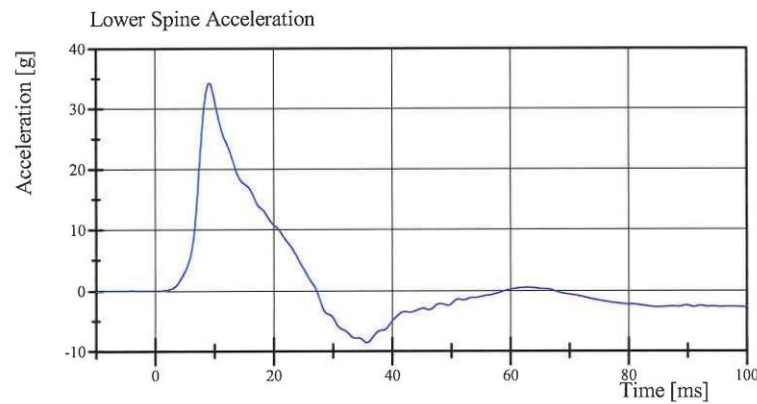
Test Date: 10/23/2015



Filter Class: CFC_180
Max: 0.3 g at 44.6 ms
Min: -32.3 g at 13.3 ms



Filter Class: CFC_180
Max: 36.5 g at 9.5 ms
Min: -9.6 g at 32.1 ms



Filter Class: CFC_180
Max: 34.2 g at 9.2 ms
Min: -8.6 g at 35.8 ms

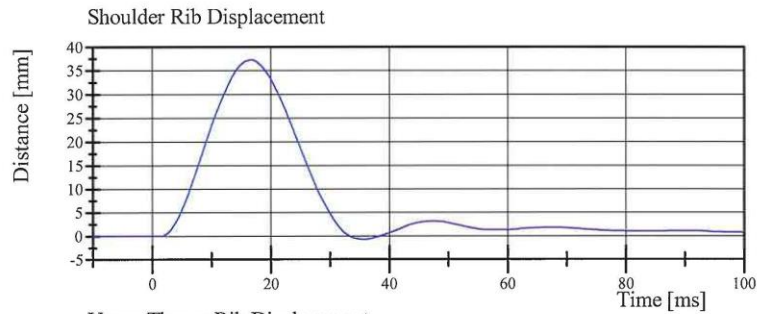
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

10.23.2015 15:03:36 602

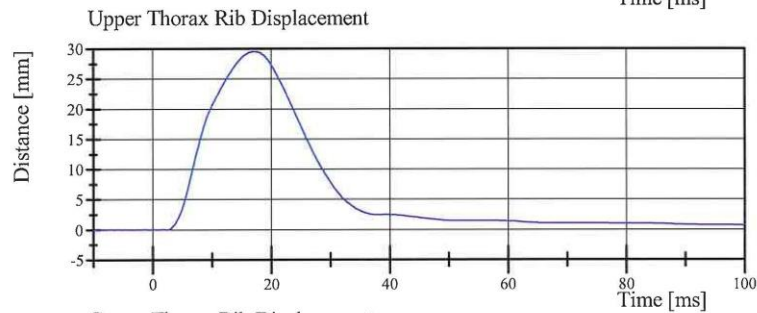


Transportation Research Center Inc.

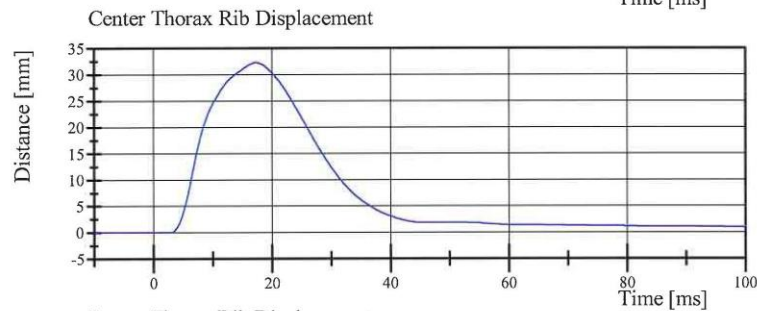
Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 18-1
Test Date: 10/23/2015



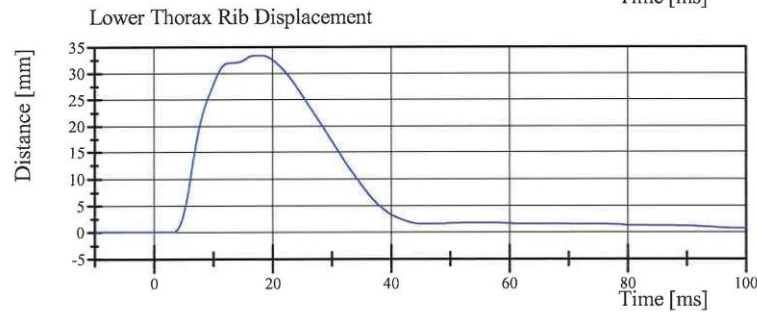
Filter Class: CFC_600
Max: 37.3 mm at 16.8 ms
Min: -0.7 mm at 35.9 ms



Filter Class: CFC_600
Max: 29.5 mm at 17.2 ms
Min: -0.0 mm at 2.5 ms



Filter Class: CFC_600
Max: 32.3 mm at 17.3 ms
Min: -0.0 mm at 2.9 ms



Filter Class: CFC_600
Max: 33.4 mm at 17.1 ms
Min: -0.0 mm at 3.1 ms

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

10.23.2015 15:03:37 602



Transportation Research Center Inc.

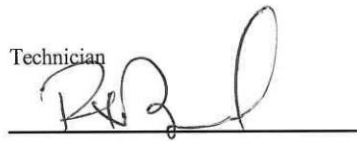
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 18-2
Test Date: 10/23/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.356 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.6 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	39.5 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	42.8 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	37.7 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.7 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.2 g	Yes

Test meets specifications.

Comments:

Technician



Approved



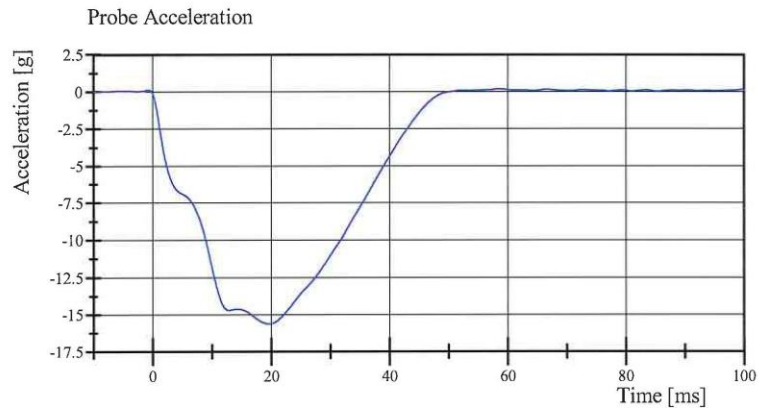
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

10.23.2015 14:30:21 823

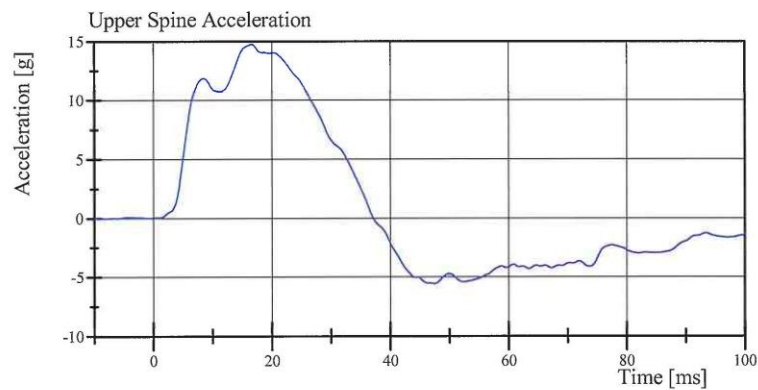


Transportation Research Center Inc.

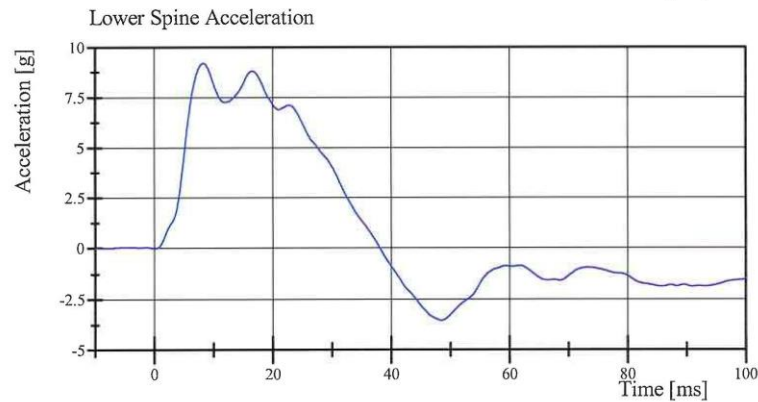
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 18-2
Test Date: 10/23/2015



Filter Class: CFC_180
Max: 0.2 g at 58.5 ms
Min: -15.6 g at 19.6 ms



Filter Class: CFC_180
Max: 14.7 g at 16.6 ms
Min: -5.5 g at 47.5 ms



Filter Class: CFC_180
Max: 9.2 g at 8.3 ms
Min: -3.5 g at 48.5 ms

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

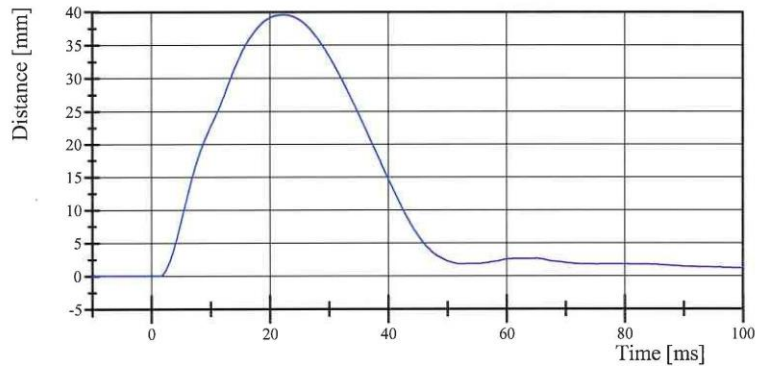
10.23.2015 14:30:29 823



Transportation Research Center Inc.

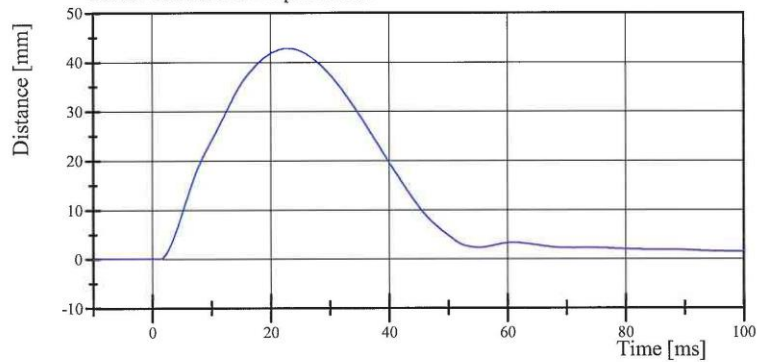
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 18-2
Test Date: 10/23/2015

Upper Thorax Rib Displacement



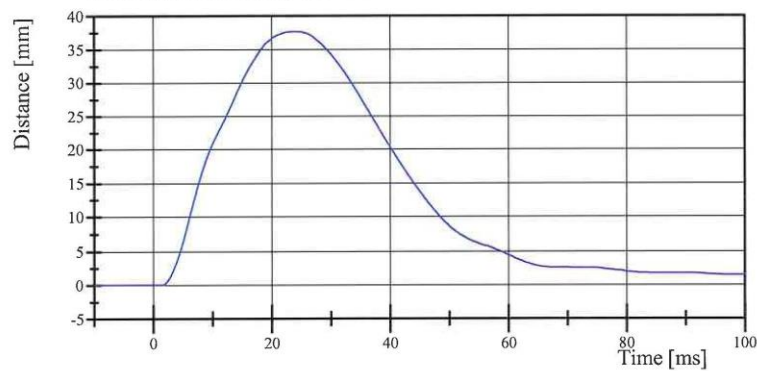
Filter Class: CFC_600
Max: 39.5 mm at 22.2 ms
Min: -0.0 mm at 1.4 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 42.8 mm at 23.0 ms
Min: -0.0 mm at 1.2 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 37.7 mm at 23.9 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.

10.23.2015 14:30:30 823



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 18-1

Test Date: 10/23/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.31 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.4 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	40.9 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	36.8 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	11.05 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.

10.23.2015 13:38:15 648

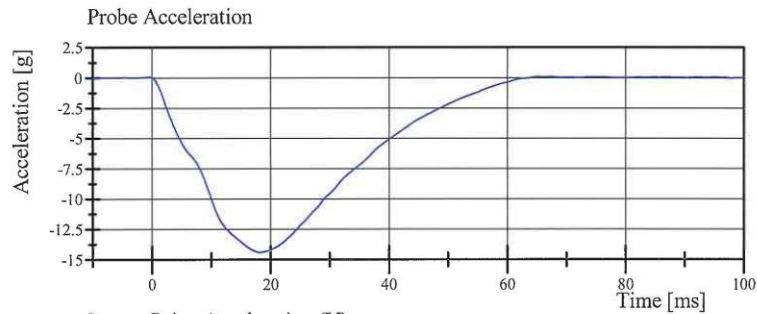


Transportation Research Center Inc.

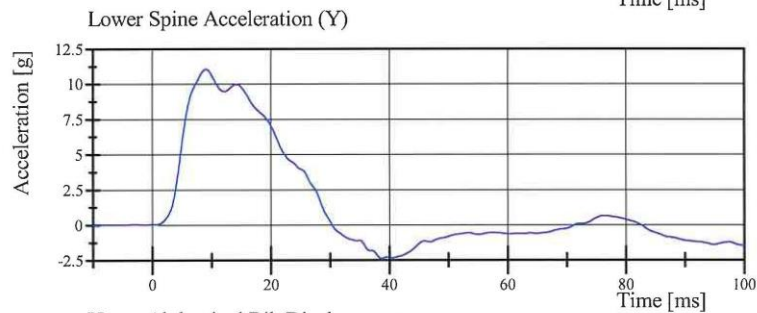
Left Lateral Abdomen

SID II Serial No. DI8818 Certification No. 18-1

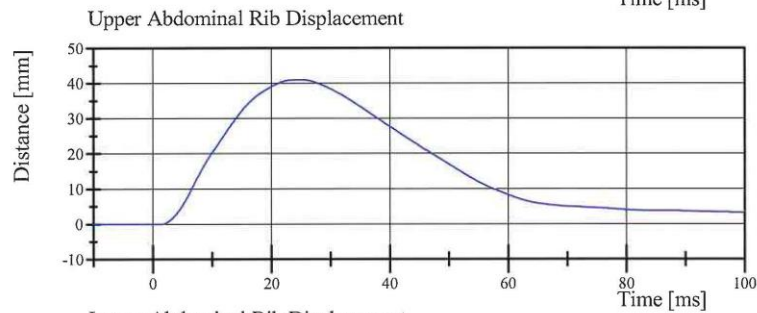
Test Date: 10/23/2015



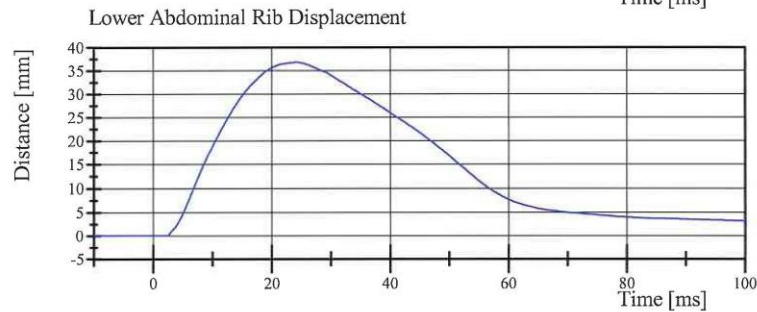
Filter Class: CFC_180
Max: 0.1 g at 65.1 ms
Min: -14.4 g at 18.2 ms



Filter Class: CFC_180
Max: 11.0 g at 9.1 ms
Min: -2.4 g at 38.7 ms



Filter Class: CFC_600
Max: 40.9 mm at 25.0 ms
Min: -0.0 mm at 1.6 ms



Filter Class: CFC_600
Max: 36.8 mm at 24.2 ms
Min: -0.0 mm at 2.3 ms

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

10.23.2015 13:38:25 648



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 18-1

Test Date: 10/26/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.67 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-43.49 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	40.5 g	Yes
Acetabulum Force	3,600 - 4,300 N	4,166.2 N	Yes

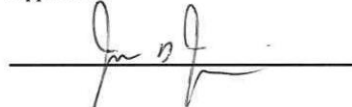
Test meets specifications.

Comments:

Technician



Approved



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

10.26.2015 08:19:52 439

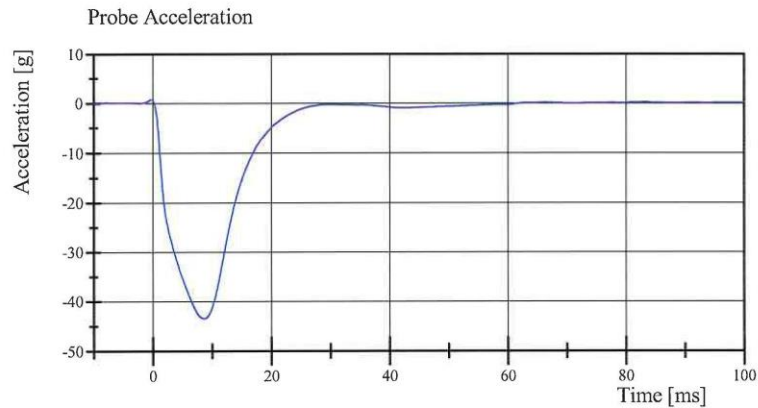


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIa Serial No. DI8818 Certification No. 18-1

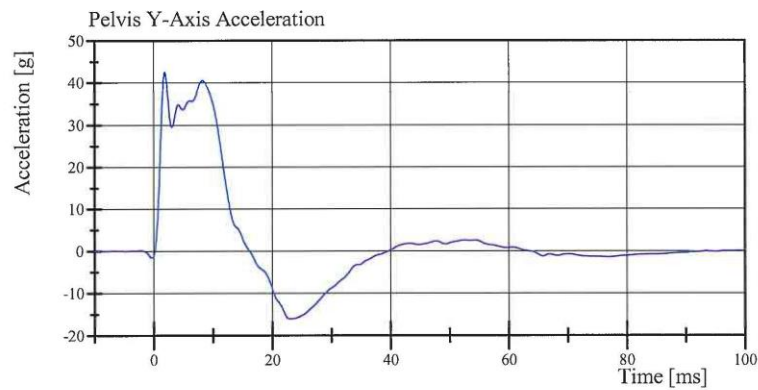
Test Date: 10/26/2015



Filter Class: CFC_180

Max: 0.6 g at -0.2 ms

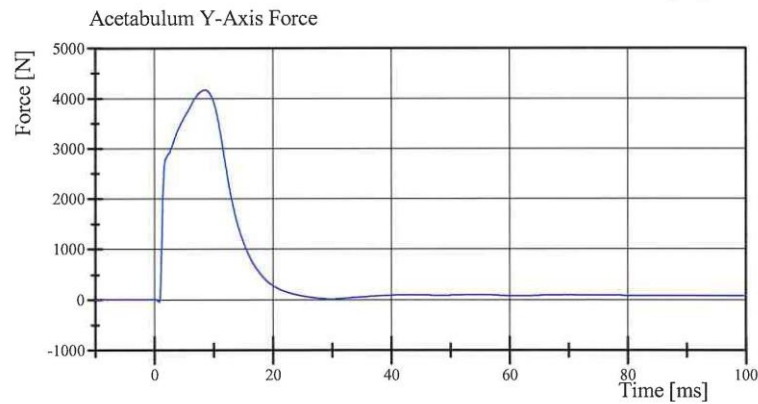
Min: -43.5 g at 8.6 ms



Filter Class: CFC_180

Max: 42.6 g at 1.9 ms

Min: -16.1 g at 23.0 ms



Filter Class: CFC_600

Max: 4,166.2 N at 8.6 ms

Min: -54.5 N at 0.8 ms

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

10.26.2015 08:20:01 439



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 18-1

Test Date: 10/23/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.35 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-42.0 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	33.8 g	Yes
Iliac Force	4,100 - 5,100 N	4,973.5 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.

10.23.2015 12:40:37 647

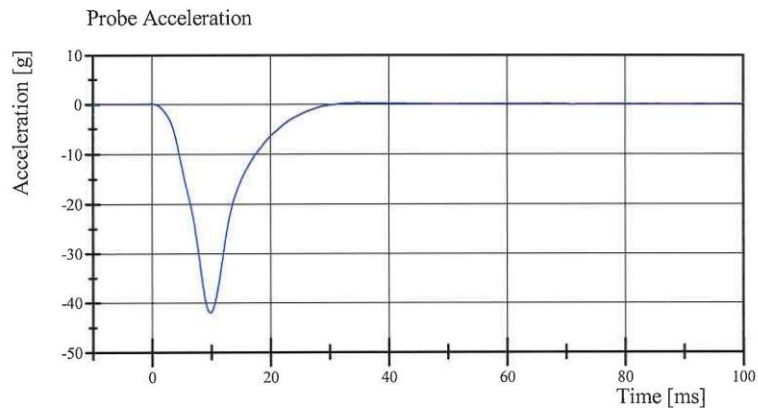


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 18-1

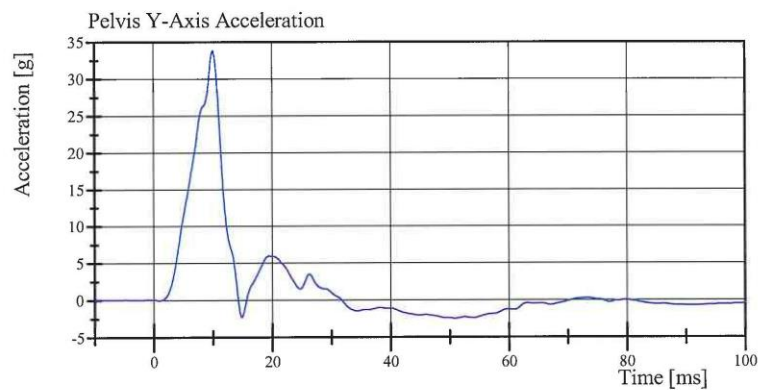
Test Date: 10/23/2015



Filter Class: CFC_180

Max: 0.3 g at 34.8 ms

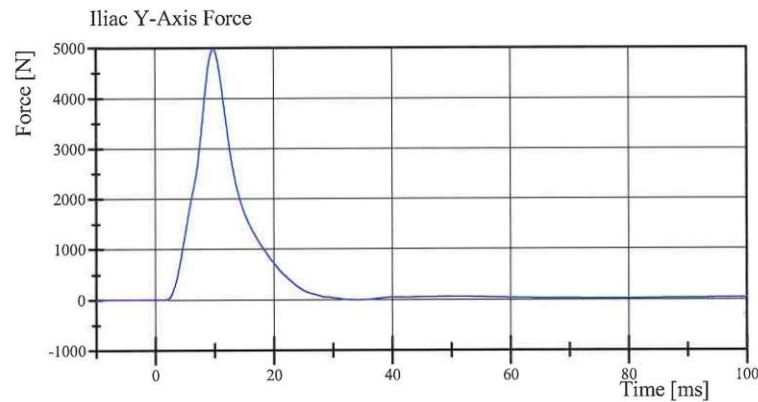
Min: -42.0 g at 9.8 ms



Filter Class: CFC_180

Max: 33.8 g at 10.1 ms

Min: -2.5 g at 50.9 ms



Filter Class: CFC_600

Max: 4,973.5 N at 9.9 ms

Min: -1.9 N at 34.0 ms

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

10.23.2015 12:40:49 647



Post-Test Calibration Sheets
Driver S/N DI8818

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DI8818 Calibration No.19

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	780	Yes
B	Shoulder Pivot Height	437.0 - 453.0	440	Yes
C	H-Point Height	79.0 - 89.0	84	Yes
D	H-Point from Seat Back	141.0 - 151.0	144	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	100	Yes
F	Thigh Clearance	119.0 - 135.0	130	Yes
G	Head Breadth	140.0 - 148.0	143	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	182	Yes
J	Head Circumference	541.0 - 551.0	544	Yes
K	Buttock to Knee Length	514.0 - 540.0	534	Yes
L	Popliteal Height	343.0 - 369.0	352	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	400	Yes
N	Buttock Popliteal Length	416.0 - 442.0	427	Yes
O	Chest Depth without Jacket	195.0 - 211.0	202	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	255	Yes
S	Knee Joint to seat Back	478.0 - 493.0	485	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	867	Yes
Z	Waist Circumference	761.0 - 791.0	775	Yes

Technician

Melissa Schunklee

Approved

[Signature]

Revised 9/29/2005



Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 19-1

Test Date: 11/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	121.9 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	6.7 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

melissa schunkel

Approved

[Signature]

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

11.30.2015 09:15:53 234

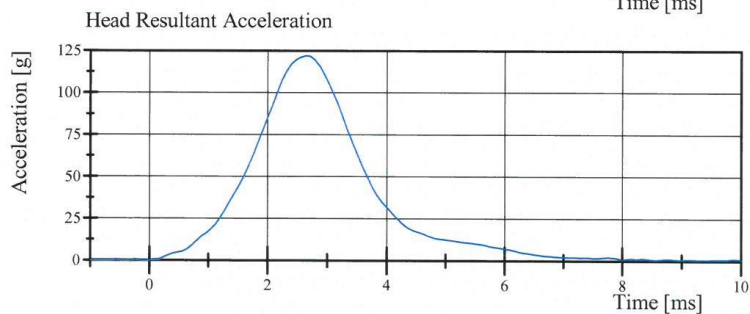
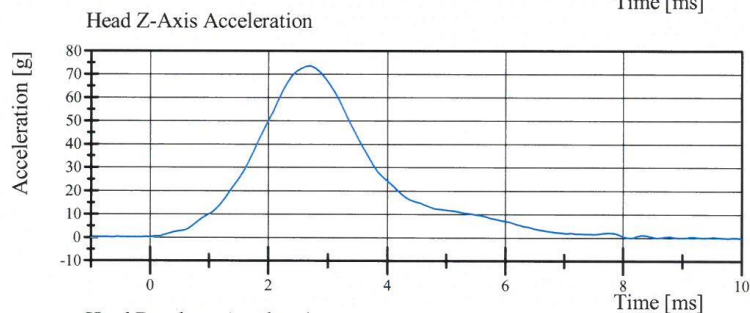
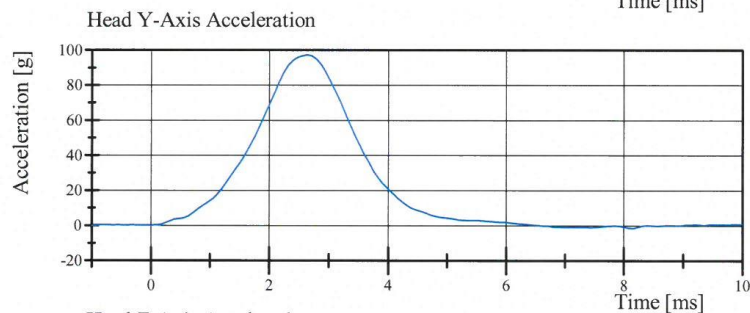
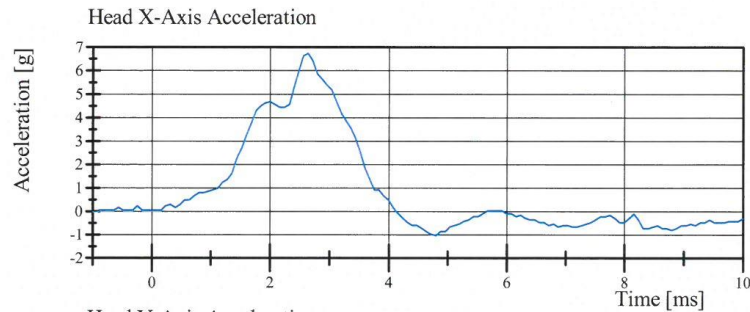


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 19-1

Test Date: 11/30/2015



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

11.30.2015 09:16:04 234



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 19-2

Test Date: 11/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.596 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.664 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	4.059 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	5.397 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.832 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.835 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-80.5 deg	Yes
Time of Peak	50 - 70 ms	69.1 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	41.4 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	120.6 ms	Yes

Test meets specifications.

Comments:

Technician

Melissa Schinker

Approved

[Signature]

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

11.30.2015 10:46:56 631

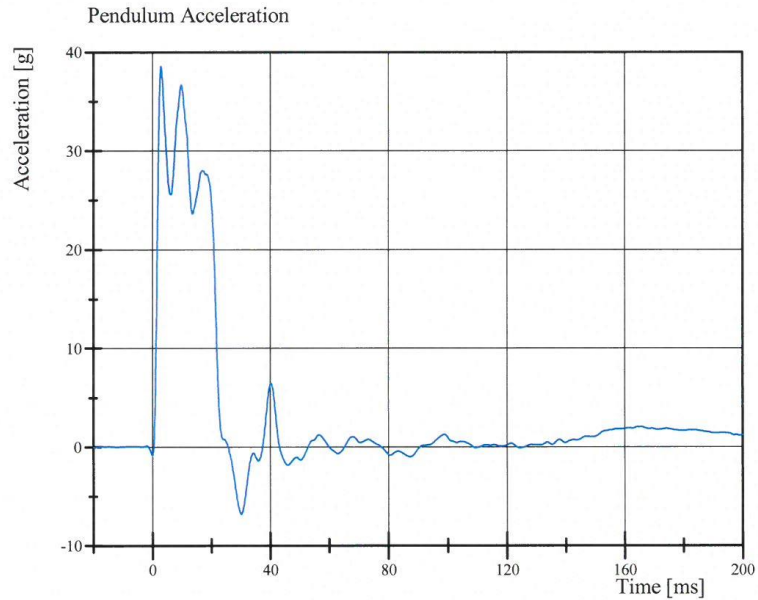


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 19-2

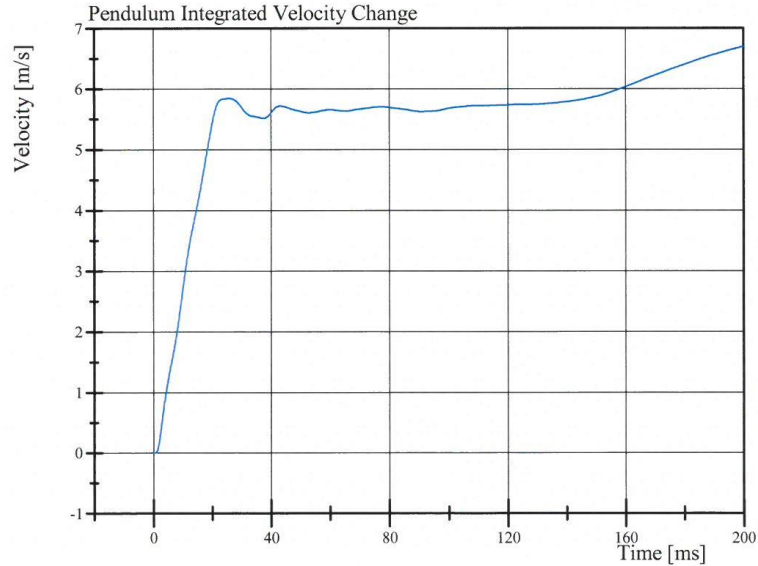
Test Date: 11/30/2015



Filter Class: CFC_180

Max: 38.5 g at 3.0 ms

Min: -6.9 g at 30.2 ms



Filter Class: CFC_180

Max: 6.7 m/s at 200.0 ms

Min: -0.0 m/s at 0.5 ms

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

11.30.2015 10:47:03 631

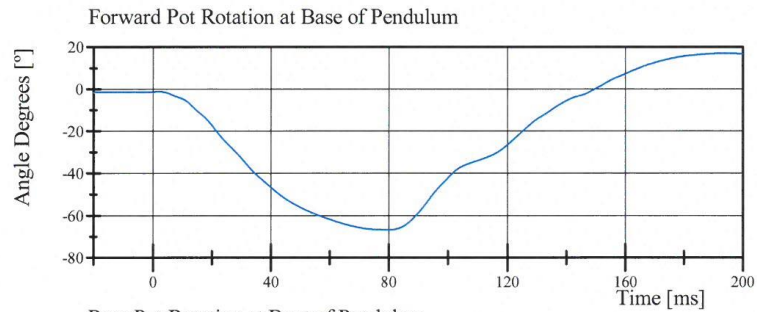


Transportation Research Center Inc.

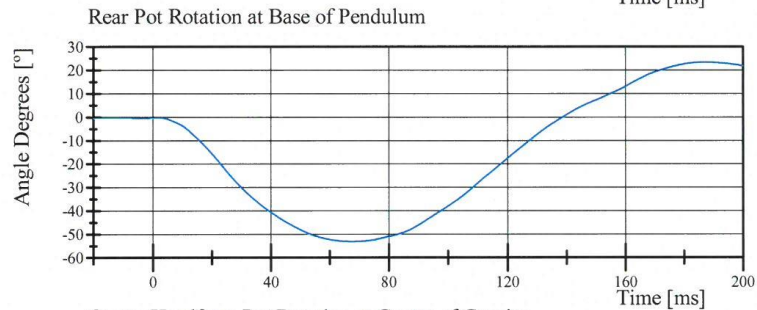
Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 19-2

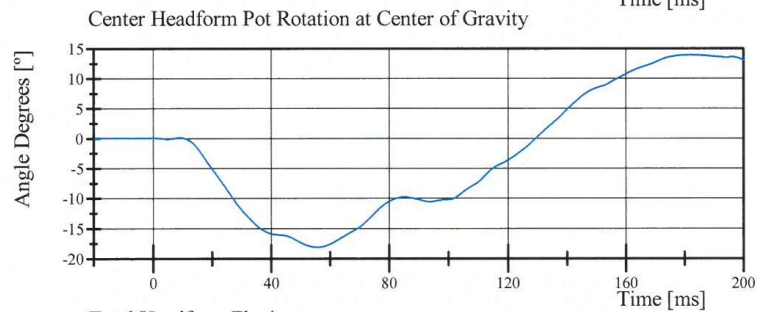
Test Date: 11/30/2015



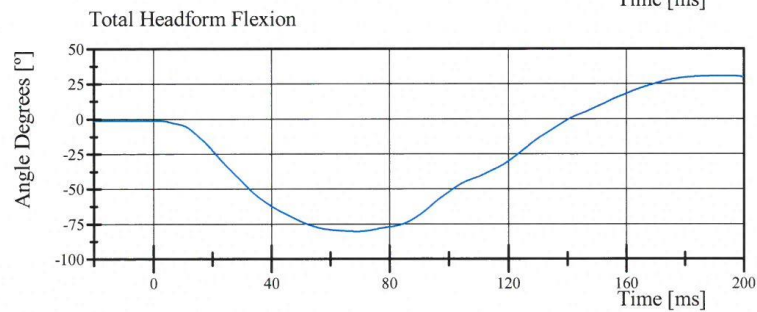
Filter Class: CFC_60
Max: 17.0 ° at 194.1 ms
Min: -66.8 ° at 79.9 ms



Filter Class: CFC_60
Max: 23.4 ° at 187.3 ms
Min: -53.3 ° at 67.6 ms



Filter Class: CFC_60
Max: 14.0 ° at 182.1 ms
Min: -18.1 ° at 55.8 ms



Filter Class: CFC_60
Max: 30.6 ° at 192.0 ms
Min: -80.5 ° at 69.1 ms

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

11.30.2015 10:47:04 631

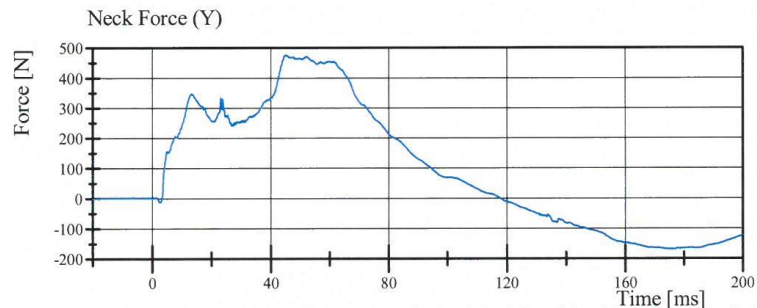


Transportation Research Center Inc.

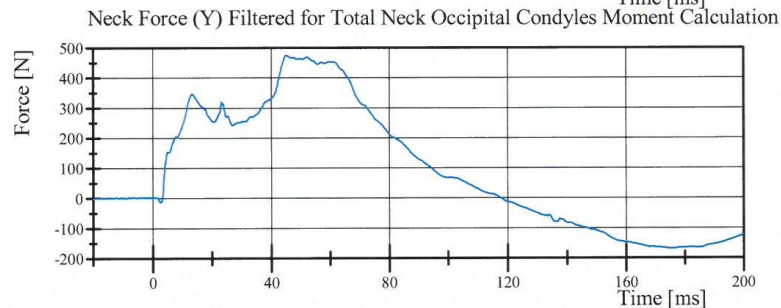
Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 19-2

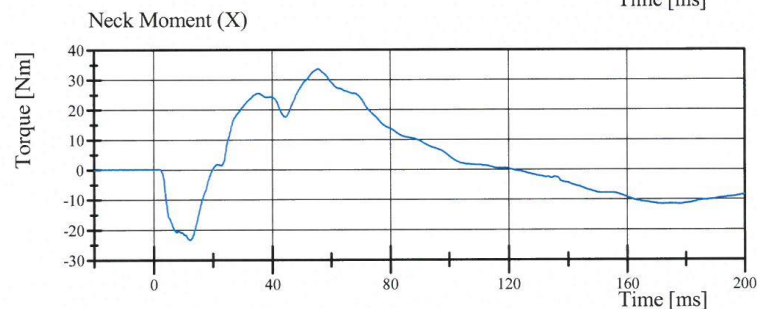
Test Date: 11/30/2015



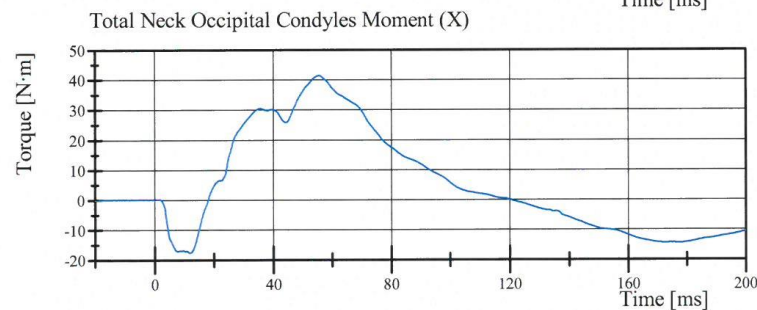
Filter Class: CFC_1000
Max: 474.9 N at 45.0 ms
Min: -168.7 N at 176.6 ms



Filter Class: CFC_600
Max: 474.2 N at 45.0 ms
Min: -168.1 N at 176.6 ms



Filter Class: CFC_600
Max: 33.5 Nm at 55.7 ms
Min: -23.4 Nm at 12.2 ms



Filter Class: Without (Consta
Max: 41.4 N·m at 55.7 ms
Min: -17.7 N·m at 11.8 ms

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

11.30.2015 10:47:05 631



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 19-1

Test Date: 11/27/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.28 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.7 g	Yes
Shoulder Displacement	28 - 37 mm	31.9 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.9 g	Yes

Test meets specifications.

Comments:

Technician

Melissa Schinke

Approved

[Signature]

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

11.27.2015 09:32:41 1001

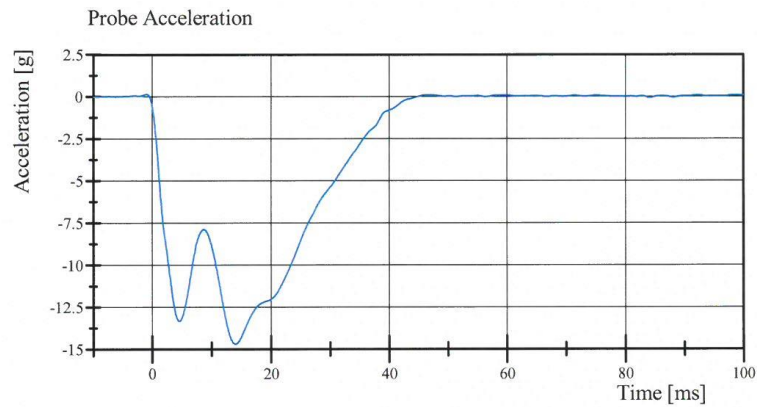


Transportation Research Center Inc.

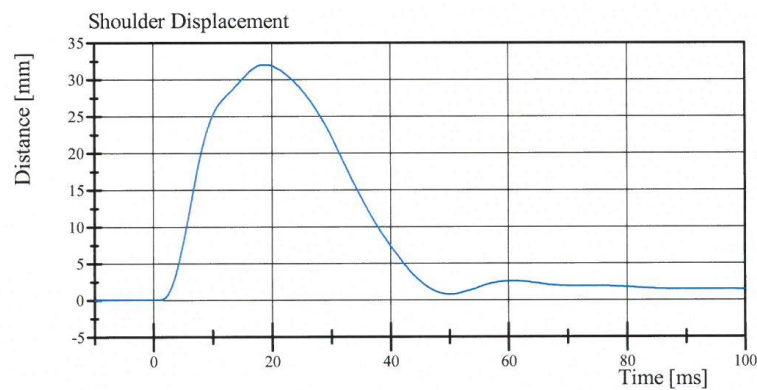
Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 19-1

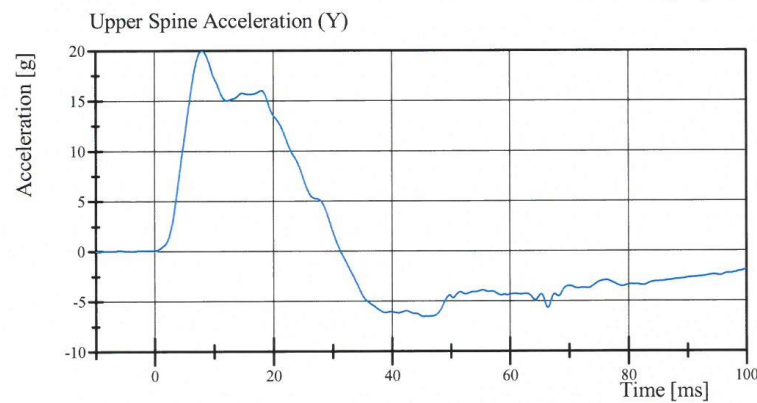
Test Date: 11/27/2015



Filter Class: CFC_180
Max: 0.1 g at -1.0 ms
Min: -14.7 g at 14.1 ms



Filter Class: CFC_600
Max: 31.9 mm at 18.6 ms
Min: -0.0 mm at 1.0 ms



Filter Class: CFC_180
Max: 19.9 g at 8.1 ms
Min: -6.6 g at 45.4 ms

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

11.27.2015 09:32:50 1001



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 19-1
Test Date: 11/27/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.725 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-34.2 g	Yes
Shoulder Displacement	31 - 40 mm	36.9 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	27.9 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.3 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	32.7 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.2 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	33.9 g	Yes

Test meets specifications.

Comments:

Technician

melissa schinkel

Approved

[Signature]

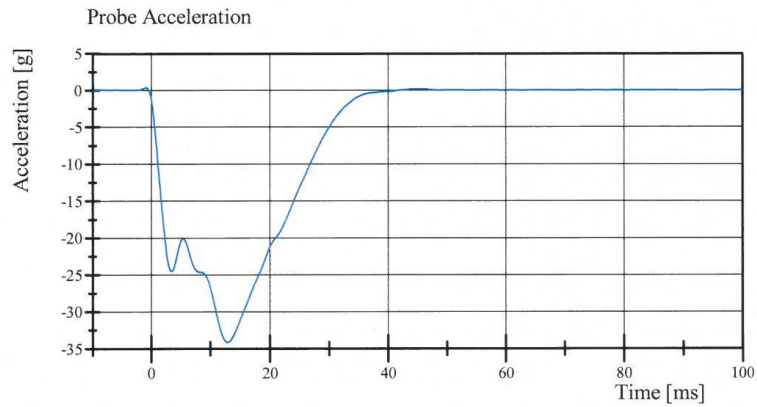
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.27.2015 11:43:15 675

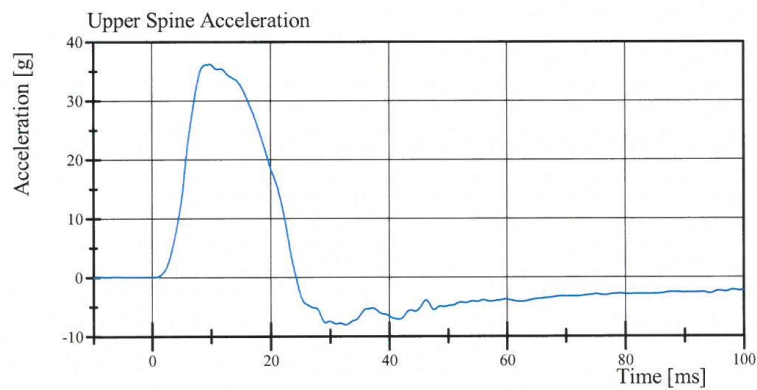


Transportation Research Center Inc.

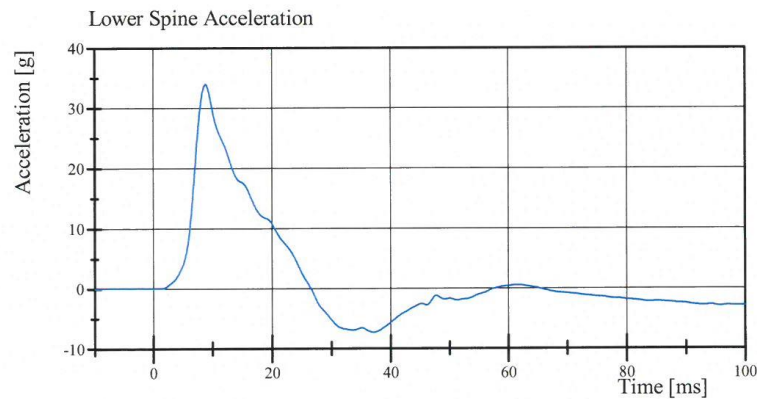
Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 19-1
Test Date: 11/27/2015



Filter Class: CFC_180
Max: 0.3 g at -0.9 ms
Min: -34.2 g at 13.0 ms



Filter Class: CFC_180
Max: 36.2 g at 9.8 ms
Min: -8.1 g at 32.6 ms



Filter Class: CFC_180
Max: 33.9 g at 8.9 ms
Min: -7.3 g at 37.1 ms

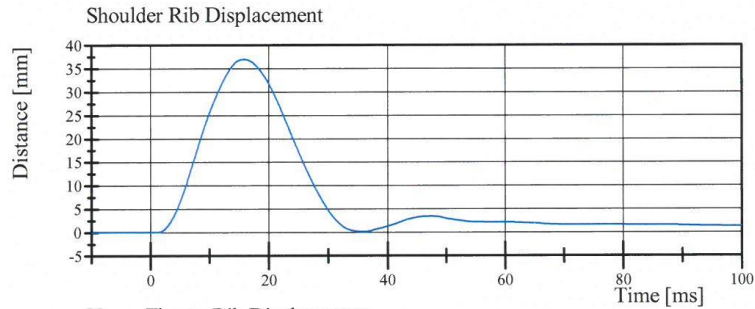
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.27.2015 11:43:26 675

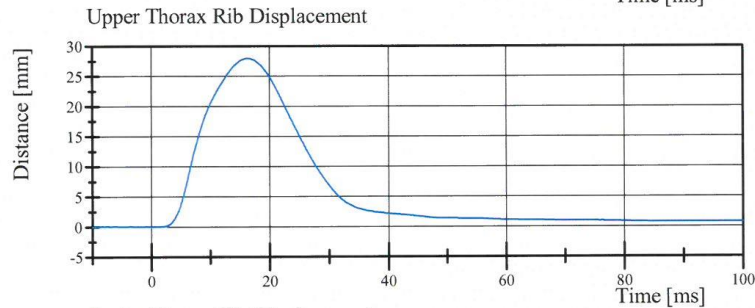


Transportation Research Center Inc.

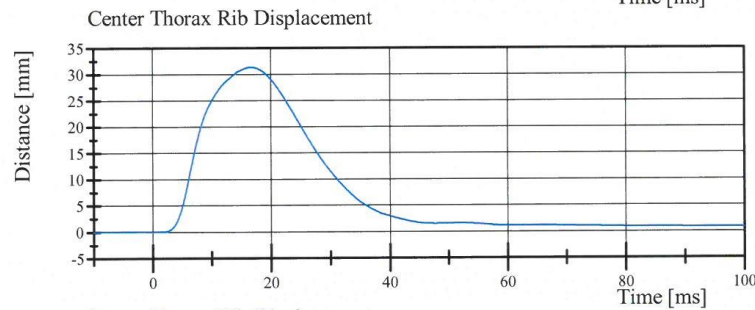
Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 19-1
Test Date: 11/27/2015



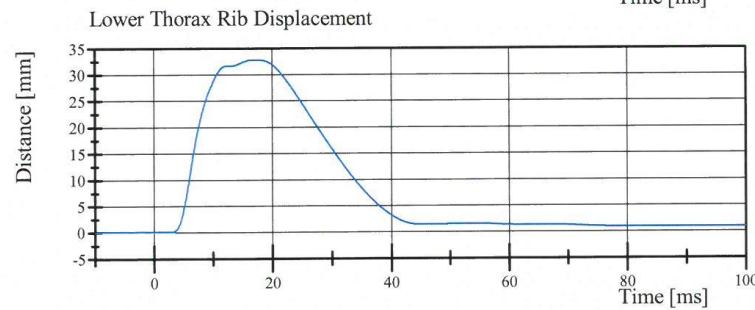
Filter Class: CFC_600
Max: 36.9 mm at 15.9 ms
Min: -0.0 mm at -5.3 ms



Filter Class: CFC_600
Max: 27.9 mm at 16.4 ms
Min: -0.0 mm at -2.4 ms



Filter Class: CFC_600
Max: 31.3 mm at 16.6 ms
Min: -0.0 mm at -1.7 ms



Filter Class: CFC_600
Max: 32.7 mm at 16.4 ms
Min: -0.0 mm at 0.1 ms

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

11.27.2015 11:43:27 675



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 19-1
Test Date: 11/27/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.286 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.7 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	37.2 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	40.5 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	37.4 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	13.5 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.3 g	Yes

Test meets specifications.

Comments:

Technician

Melissa Schirmer

Approved

[Signature]

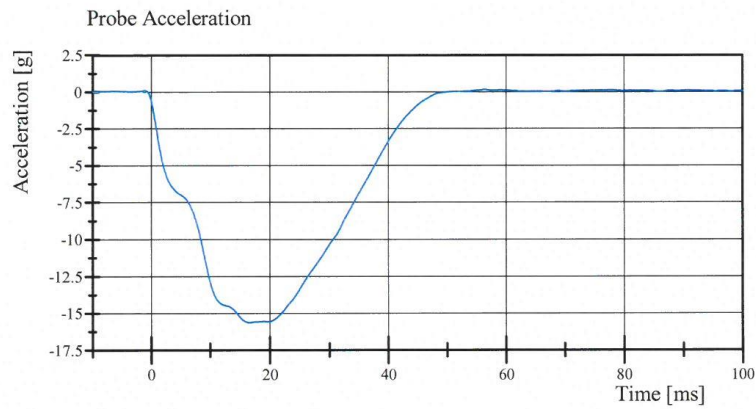
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.27.2015 10:05:57 1052

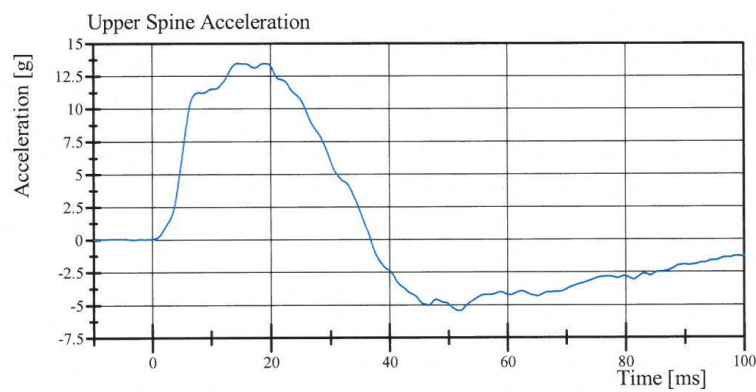


Transportation Research Center Inc.

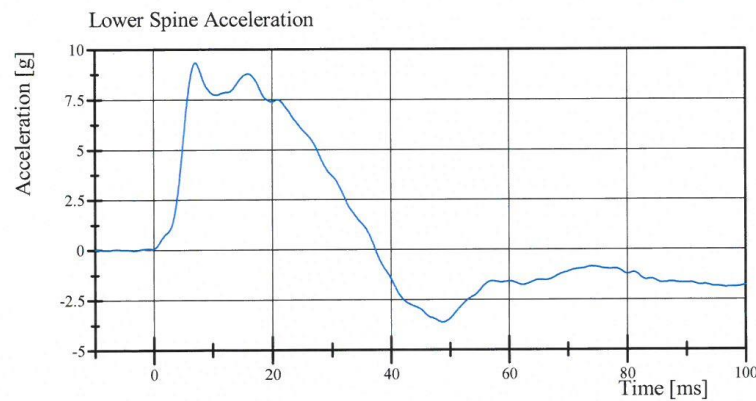
Left Lateral Thorax without Arm
SID IIa Serial No. DI8818 Certification No. 19-1
Test Date: 11/27/2015



Filter Class: CFC_180
Max: 0.2 g at 56.4 ms
Min: -15.7 g at 16.6 ms



Filter Class: CFC_180
Max: 13.5 g at 14.6 ms
Min: -5.5 g at 51.8 ms



Filter Class: CFC_180
Max: 9.3 g at 7.1 ms
Min: -3.6 g at 48.7 ms

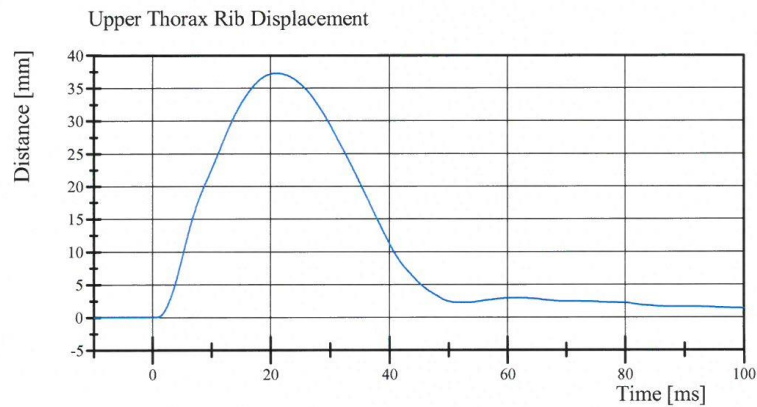
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.27.2015 10:06:07 1052

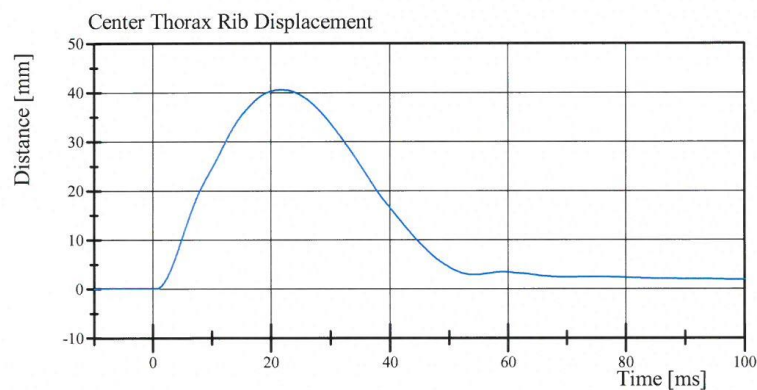


Transportation Research Center Inc.

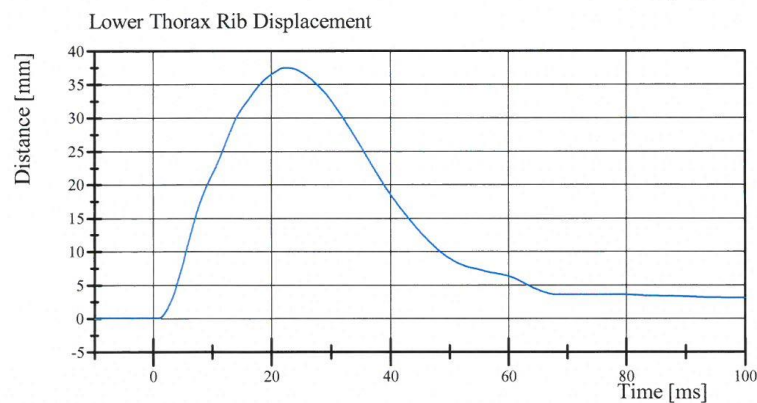
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 19-1
Test Date: 11/27/2015



Filter Class: CFC_600
Max: 37.2 mm at 21.0 ms
Min: -0.0 mm at 0.6 ms



Filter Class: CFC_600
Max: 40.5 mm at 21.8 ms
Min: -0.0 mm at 0.6 ms



Filter Class: CFC_600
Max: 37.4 mm at 22.4 ms
Min: -0.0 mm at -6.4 ms

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

11.27.2015 10:06:07 1052



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 19-3

Test Date: 11/27/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-15.3 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	40.4 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	38.3 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.69 g	Yes

Test meets specifications.

Comments:

Technician

Melissa Schenker

Approved

[Signature]

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

11.27.2015 14:38:57 849

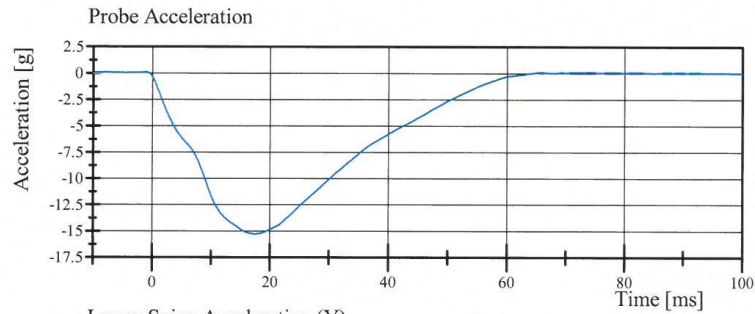


Transportation Research Center Inc.

Left Lateral Abdomen

SID II_s Serial No. DI8818 Certification No. 19-3

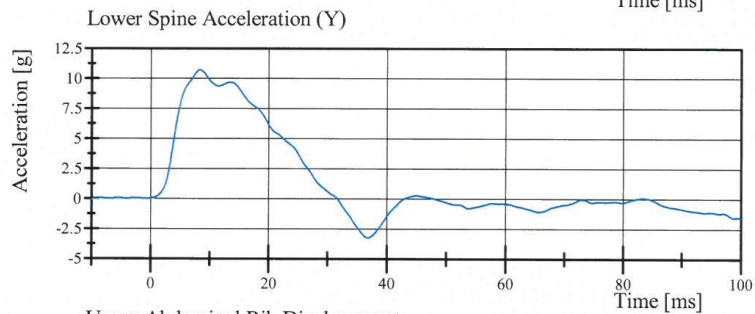
Test Date: 11/27/2015



Filter Class: CFC_180

Max: 0.1 g at 74.1 ms

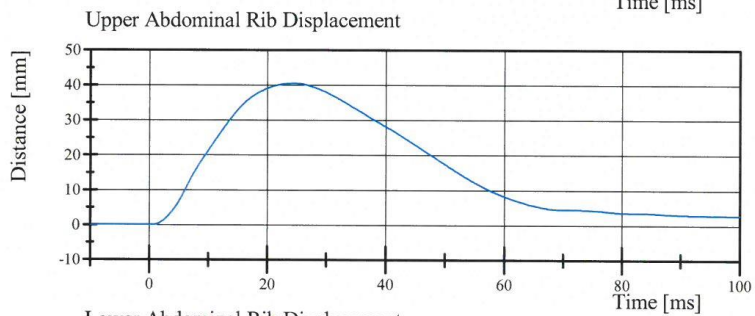
Min: -15.3 g at 17.5 ms



Filter Class: CFC_180

Max: 10.7 g at 8.3 ms

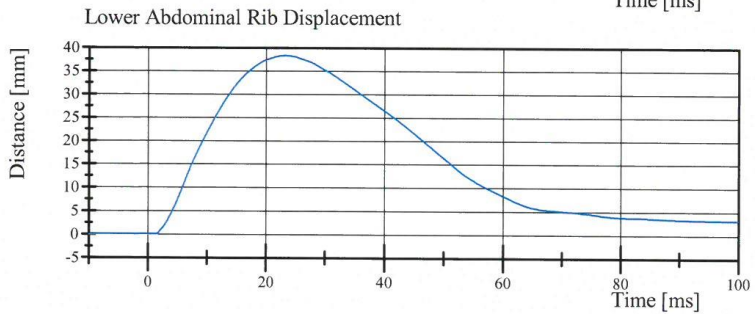
Min: -3.3 g at 36.9 ms



Filter Class: CFC_600

Max: 40.4 mm at 24.6 ms

Min: -0.0 mm at 0.6 ms



Filter Class: CFC_600

Max: 38.3 mm at 23.3 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.

11.27.2015 14:39:06 849



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 19-4

Test Date: 11/30/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.64 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-46.84 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	41.9 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,973.9 N	Yes

Test meets specifications.

Comments:

Technician

melissa schenker

Approved

[Signature]

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

11.30.2015 14:04:38 465

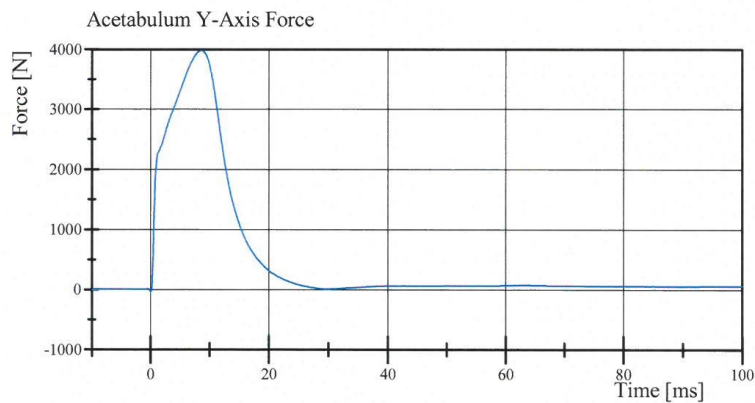
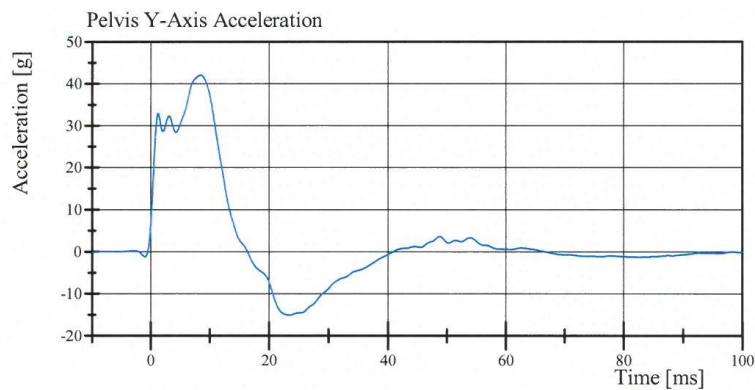
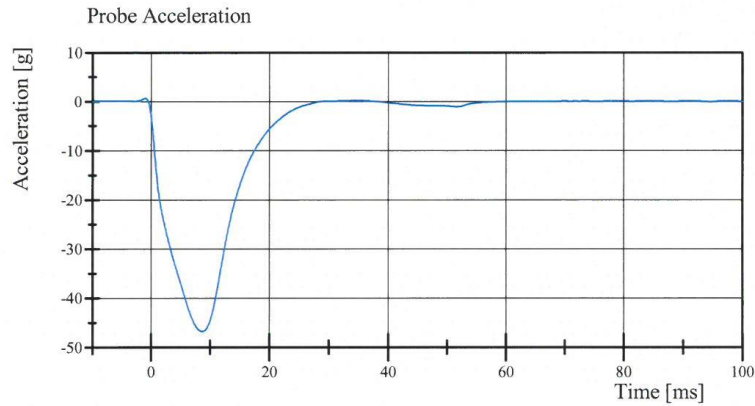


Transportation Research Center Inc.

Left Lateral Pelvis

SID II_s Serial No. DI8818 Certification No. 19-4

Test Date: 11/30/2015



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

11.30.2015 14:04:49 465



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 19-1

Test Date: 11/27/2015

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-40.7 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	30.2 g	Yes
Iliac Force	4,100 - 5,100 N	4,684.9 N	Yes

Test meets specifications.

Comments:

Technician

Melissa Sel

Approved

[Signature]

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

11.27.2015 08:41:00 668

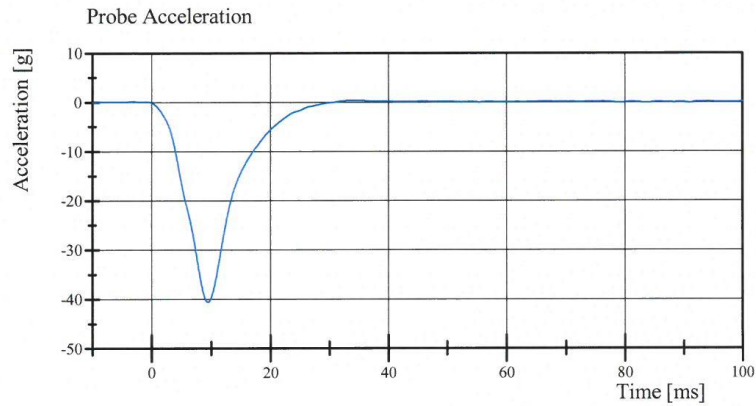


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 19-1

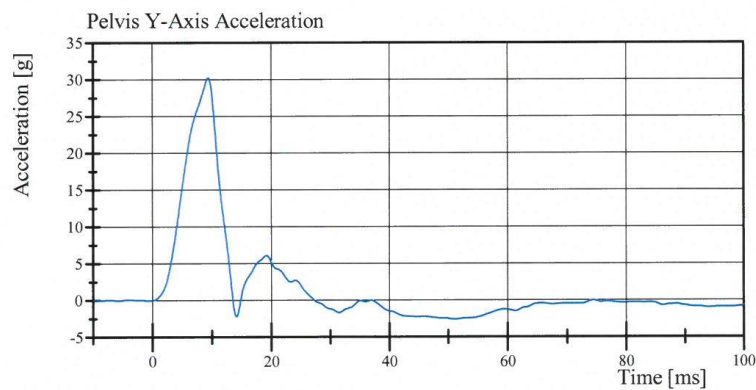
Test Date: 11/27/2015



Filter Class: CFC_180

Max: 0.3 g at 34.1 ms

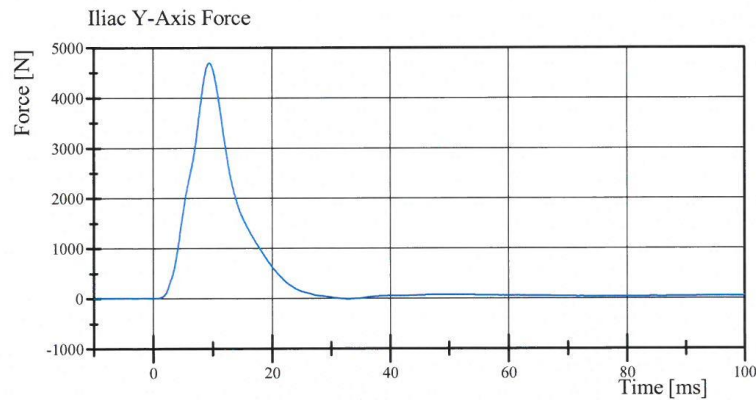
Min: -40.7 g at 9.4 ms



Filter Class: CFC_180

Max: 30.2 g at 9.4 ms

Min: -2.6 g at 51.1 ms



Filter Class: CFC_600

Max: 4,684.9 N at 9.5 ms

Min: -9.5 N at 32.8 ms

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

11.27.2015 08:41:10 668



APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N DI8818			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers				X	J32214	Endevco	17-Nov-2015
				Y	J27040	Endevco	17-Nov-2015
				Z	AGAC4	Endevco	17-Nov-2015
Displacement Potentiometers	Shoulder		Y	N/A	N/A	N/A	
	Thoracic Rib	Upper	Y	047	Servo	17-Nov-2015	
		Middle	Y	01815	Servo	17-Nov-2015	
		Lower	Y	043	Servo	17-Nov-2015	
	Abdominal Rib	Upper	Y	01811	Servo	17-Nov-2015	
		Lower	Y	051	Servo	17-Nov-2015	
Lower Spine Accelerometers (T12)				X	P64150	Endevco	17-Nov-2015
				Y	P64142	Endevco	17-Nov-2015
				Z	P64100	Endevco	17-Nov-2015
Acetabulum Load Cell				Y	235-FY	FTSS	29-Apr-2015
Iliac Wing Load Cell				Y	113-FY	FTSS	29-Apr-2015
Pelvis Plug (struck side)					70840	Humanetics	13-Dec-2013
Pelvis Plug (non-struck side)					63609	Humanetics	15-Feb-2013

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P88466	Endevco	24-Jul-2015
Vehicle Center of Gravity	Y	P49020	Endevco	17-Jul-2015
Vehicle Center of Gravity	Z	P58759	Endevco	21-Jul-2015
Left Floor Sill	Y	P83459	Endevco	23-Jul-2015
A-Pillar Sill	Y	P33945	Endevco	5-Oct-2015
A-Pillar Low	Y	P41057	Endevco	10-Jul-2015
A-Pillar Mid	Y	P45591	Endevco	17-Jul-2015
B-Pillar Sill	Y	P88551	Endevco	2-Nov-2015
B-Pillar Low	Y	P88031	Endevco	3-Sep-2015
B-Pillar Mid	Y	P90863	Endevco	12-Oct-2015
Driver Seat	Y	P75523	Endevco	21-Jul-2015
Engine Top	X	P88557	Endevco	13-Oct-2015
Engine Top	Y	P90289	Endevco	13-Oct-2015
Firewall	Y	P88032	Endevco	10-Jul-2015
Right Roof	Y	P50473	Endevco	21-Oct-2015
Right Floor Sill	Y	P61772	Endevco	21-Oct-2015
Rear Floor Pan	X	P70050	Endevco	14-Oct-2015
Rear Floor Pan	Y	P88541	Endevco	7-Aug-2015

TABLE 3 – Pole Instrumentation

Pole Instrumentation	Serial Number	Manufacturer	Calibration Date
Load Cell 1	88-FX	Denton	13-Nov-2015
Load Cell 2	77-FX	Denton	13-Nov-2015
Load Cell 3	103-FX	Denton	13-Nov-2015
Load Cell 4	101-FX	Denton	13-Nov-2015
Load Cell 5	92-FX	Denton	13-Nov-2015
Load Cell 6	84-FX	Denton	13-Nov-2015
Load Cell 7	97-FX	Denton	13-Nov-2015
Load Cell 8	87-FX	Denton	13-Nov-2015