

FINAL REPORT NUMBER: SPNCAP-TRC-16-004

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

**Volkswagen de Mexico S.A. de C.V. Mexico
2016 Volkswagen Golf SportWagen
NHTSA NUMBER: M20165801**

**PREPARED BY:
Transportation Research Center Inc.
10820 State Route 347
P. O. Box B-67
East Liberty, OH 43319**



Report Date: March 4, 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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Report Prepared By: ILO Project Operations Group

Report Approved By: Melinda Lackey
Melinda Lackey, Project Manager

Approval Date: March 4, 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

1. Report No. SPNCAP-TRC-16-004	2. Government Accession No.	3. Recipient's Catalog No.																									
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of 2016 Volkswagen Golf SportWagen NHTSA No.: M20165801		5. Report Date March 4, 2016																									
		6. Performing Organization Code TRC Inc.																									
7. Author(s) Melinda Lackey, Project Manager		8. Performing Organization Report No. 160127																									
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319		10. Work Unit No.																									
		11. Contract or Grant No. DTNH22-14-D-00354																									
12. Sponsoring Agency Name and Address 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, DC 20590		13. Type of Report and Period Covered Final Test Report January 27, 2016 – March 4, 2016																									
		14. Sponsoring Agency Code NRM-110																									
15. Supplemental Notes																											
16. Abstract A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject vehicle, a 2016 Volkswagen Golf SportWagen, 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 January 27, 2016. The impact velocity was 32.47 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 348 mm at Level 3. The test or target vehicle's performance is given below: <table border="1"> <thead> <tr> <th></th><th><u>Unit</u></th><th><u>Threshold</u></th><th><u>Front SID-IIs</u></th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆):</td><td>NA</td><td>1000</td><td><u>274</u></td></tr> <tr> <td>Resultant Lower Spine Acceleration:</td><td>g's</td><td>82</td><td><u>45.4</u></td></tr> <tr> <td>Total Pelvic Force: (sum of acetabular and iliac forces)</td><td>N</td><td>5525</td><td><u>2998.5</u></td></tr> <tr> <td>Maximum Thoracic Rib Deflection</td><td>mm</td><td>38</td><td><u>21.3</u></td></tr> <tr> <td>Maximum Abdomen Rib Deflection</td><td>mm</td><td>45</td><td><u>18.7</u></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.					<u>Unit</u>	<u>Threshold</u>	<u>Front SID-IIs</u>	Head Injury Criteria (HIC ₃₆):	NA	1000	<u>274</u>	Resultant Lower Spine Acceleration:	g's	82	<u>45.4</u>	Total Pelvic Force: (sum of acetabular and iliac forces)	N	5525	<u>2998.5</u>	Maximum Thoracic Rib Deflection	mm	38	<u>21.3</u>	Maximum Abdomen Rib Deflection	mm	45	<u>18.7</u>
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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																									
19. Security Classification (of this report) Unclassified	20. Security Classification (of this page) Unclassified	21. Number of Pages 122	22. Price																								

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SECTION 1

TEST PURPOSE AND PROCEDURE

TEST PURPOSE AND PROCEDURE

This side impact test was conducted as part of the MY 16 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 Volkswagen Golf SportWagen manufactured by Volkswagen de Mexico. 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 Volkswagen Golf SportWagen. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.47 km/h. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on January 27, 2016. 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	274
Lower Spine Acceleration Resultant	G	82	45.4
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2998.5
Maximum Thoracic Rib Deflection	mm	38*	21.3
Maximum Abdominal Rib Deflection	mm	45*	18.7

* 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	No	N/A		
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	Yes	No	N/A
Seat Belt Load Limiter	Yes	Yes	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 Volkswagen Golf SportWagen
Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
Test Date: 1/27/15

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20165801	Traction Control System (TCS)	Yes
Model Year	2016	Auto-Leveling System	No
Make	Volkswagen	Automatic Door Locks (ADL)	Yes
Model	Golf SportWagen	Power Window Auto-Reverse	Yes
Body Style	Passenger Car	Other Optional Feature	No
VIN	3VWC17AU0GM514598	Driver Front Airbag	Yes
Body Color	Tungsten Silver Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	12 mi	Driver Head/Torso Airbag	No
Engine Displacement (L)	1.8	Driver Torso Airbag	No
Type/No. Cylinders	Straight/4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Front/Transverse	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	6	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	FWD	Rear Pass. Torso Airbag	No
Roof Rack	Rails	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	Seatback only	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?

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Volkswagen de Mexico S.A. de C.V. Mexico	GVWR (kg)	1930
Date of Manufacturer	11/15	GAWR Front (kg)	980
Vehicle Type	Passenger Car	GAWR Rear (kg)	1000

VEHICLE SEATING AND WEIGHT CAPACITY DATA

	Front	Rear	Third	Total
Designated Seating Capacity (DSC)	2	3	N/A	5
Vehicle Capacity Weight (VCW) (kg)				454
DSC X 68.04 kg				340.2
Rated Cargo and Luggage Weight (RCLW) (kg)				113.8

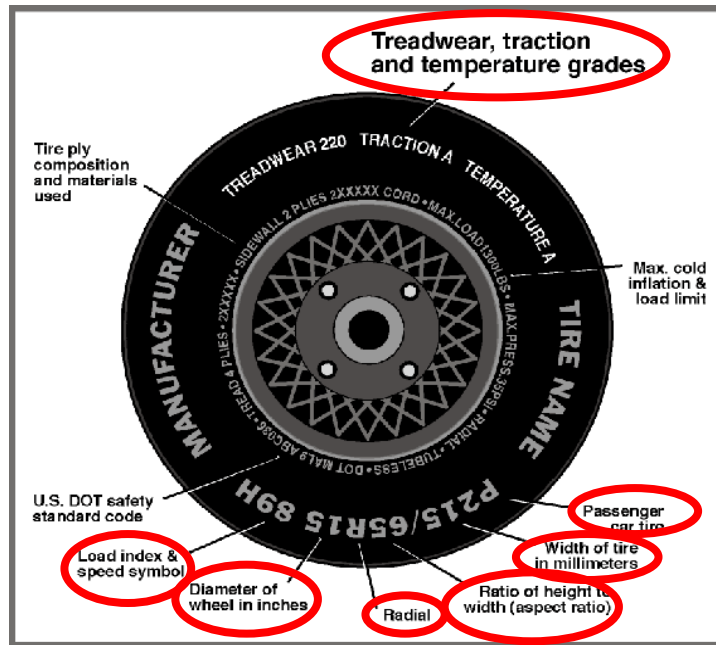
VEHICLE SEAT TYPE

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 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	230	230
Recommended Tire Size	195/65R15	195/65R15
Tire Size on Vehicle	195/65R15	195/65R15
Tire Manufacturer	Continental	Continental
Tire Model	ProContact TX	ProContact TX
Treadwear	500	500
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	1	1
Tire Plies Body	4	4
Load Index/Speed Symbol	91H	91H
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Left	P5AE WC1A 3915	P5AE WC1A 3915
DOT Safety Code Right	P5AE WC1A 3915	P5AE WC1A 3915

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Volkswagen Golf SportWagen

NHTSA No.: M20165801

Test Program: SPNCAP Side Impact

Test Date: 1/27/15

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	262	262	255	276
Tire Placard	kPa	230	230	230	230
Owner's Manual	kPa	N/A	N/A	N/A	N/A
As Tested	kPa	230	230	230	230

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	405.0	311.8		420.2	371.4		426.2	391.2	
Right	kg	405.6	291.4		415.8	361.6		399.8	359.2	
Ratio	%	57.3	42.7		53.3	46.7		52.4	47.6	
Totals	kg	810.6	603.2	1413.8	836.0	733.0	1569.0	826.0	750.4	1576.4

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total As Delivered Weight (UVW)	kg	1413.8
Actual Weight of 1 P572V ATD (SID-11s) Dummy Used	kg	49.0
Rated Cargo/Luggage Weight (RCLW)	kg	113.8
Calculated Vehicle Target Weight (TVTW)	kg	1576.6

(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

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	Deg.	-0.3	+0.2	+0.4	Yes
Front Passenger Sill Angle (front-to-rear)*	Deg.	+0.1	+0.2	+0.6	Yes
Front Bumper-Line Angle (left-to-right)**	Deg.	0.0	0.1	-0.4	Yes
Rear Bumper-Line Angle (left-to-right)**	Deg.	0.0	0.2	-0.5	Yes
Vehicle CG (Aft of Front Axle)	mm	1121	1228	1251	
Vehicle CG (Left (+) / Right (-) from longitudinal Centerline)	mm	+11	+7	+29	

*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".

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Ballast:	58.06
Components removed: None	0

DATA SHEET NO. 2

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

Test Vehicle: 2016 Volkswagen Golf SportWagen

NHTSA No.: M20165801

Test Program: SPNCAP Side Impact

Test Date: 1/27/15

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	22.1	17.5	19.8
Front Passenger Seat	20.9	15.7	18.3
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 SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore/Aft	Forward-Most
Driver Seat	19.8	151	Max	N/A	N/A	N/A
			Mid	130	141	151
			Min	N/A	N/A	N/A
Front Passenger Seat	18.3	154	Max	N/A	N/A	N/A
			Mid	133	143	154
			Min	N/A	N/A	N/A
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	18.9	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	18.4	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*	13.5	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 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15

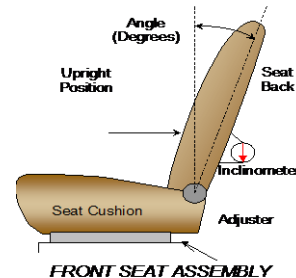
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	354	38	0	0
Front Passenger Seat	354	38	0	0
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	71.6	N/A	8.3	N/A
Front Passenger Seat	71.4	N/A	8.3	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 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	5, numbered from 0 to 4	0, Lowermost

DATA SHEET NO. 2 (CONTINUED)

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

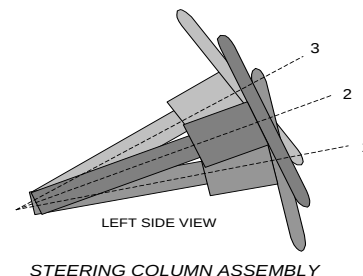
Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15

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.

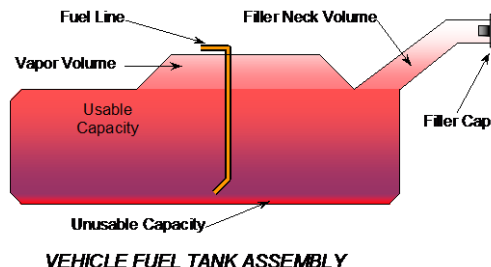
	Degrees	Fore/Aft Position, mm
Lowermost, Position No. 1	71.2	300
Geometric Center, Position No. 2	68.3	354
Uppermost, Position No. 3	65.3	327
Telescoping Steering Wheel Travel		54
Test Position	68.3	327



FUEL PUMP

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

The fuel pump runs for 2 seconds after ignition is switched on. If the engine doesn't run, the fuel pump stops running. If there is a crash signal, it will also stop running.



FUEL TANK CAPACITY

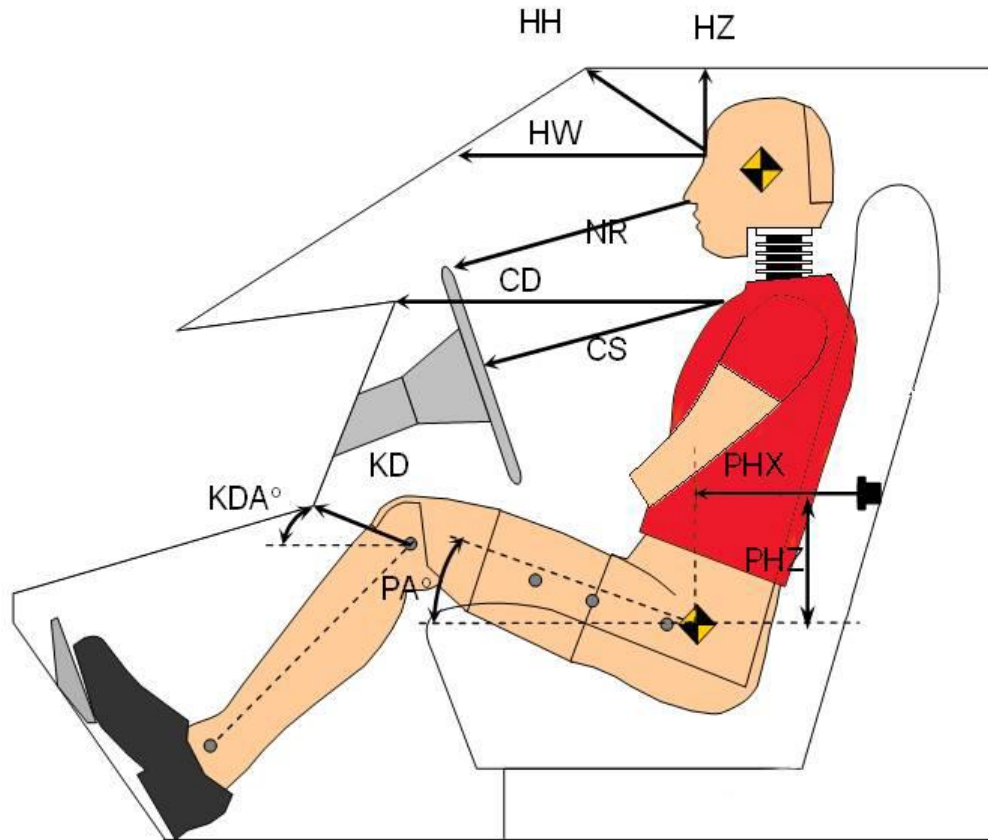
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	50
Usable Capacity of "Optional" Tank (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	50
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	46.5
Actual Amount of Solvent Used in Test	46.5
1/3 of Usable Capacity	16.7

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

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15

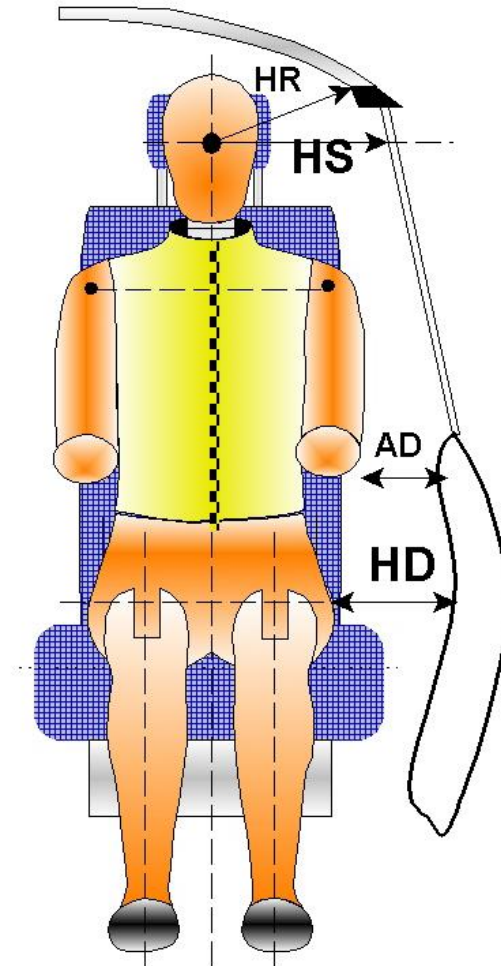


Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	267	
HW	Head to Windshield	579	
HZ	Head to Visor	190	
NR	Nose to Rim	215	
CD	Chest to Dashboard	402	
CS	Chest to Steering Wheel	175	
KDL/KDLA°	Left Knee to Dash	178	36
KDR/KDRA°	Right Knee to Dash	170	36
PAX°	Pelvic Tilt Angle (X-axis)		22.5
PAY°	Pelvic Tilt Angle (Y-axis)		0.8
PHX	Hip Point to Striker (X-Axis)	298	
PHZ	Hip Point to Striker (Z-Axis)	267	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Volkswagen Golf SportWagen
Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
Test Date: 1/27/15

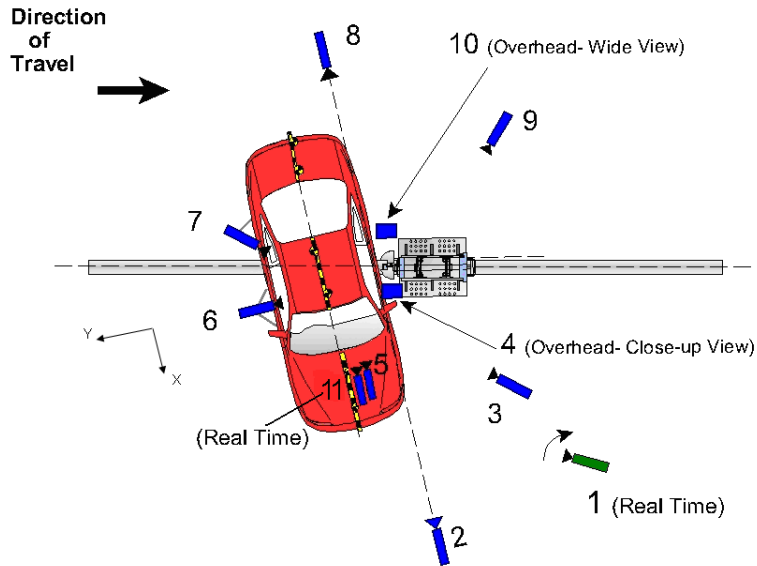


Code	Measurement Description	Length (mm)
HR	Head to Side Header	247
HS	Head to Side Window	376
AD	Arm to Door	176
HD	Hip Point to Door	176

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15



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	5635	195	-1227	20	1000
3	Impact side 45° – forward pole view	4741	-955	-1296	20	1000
4	Overhead Close-up view of impact	0	0	-5325	50	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	-5150	0	-1257	20	1000
9	Impact side 45° – rearward pole view	-3386	-2493	-1397	25	1000
10	Overhead wide view of impact	-110	360	-5806	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

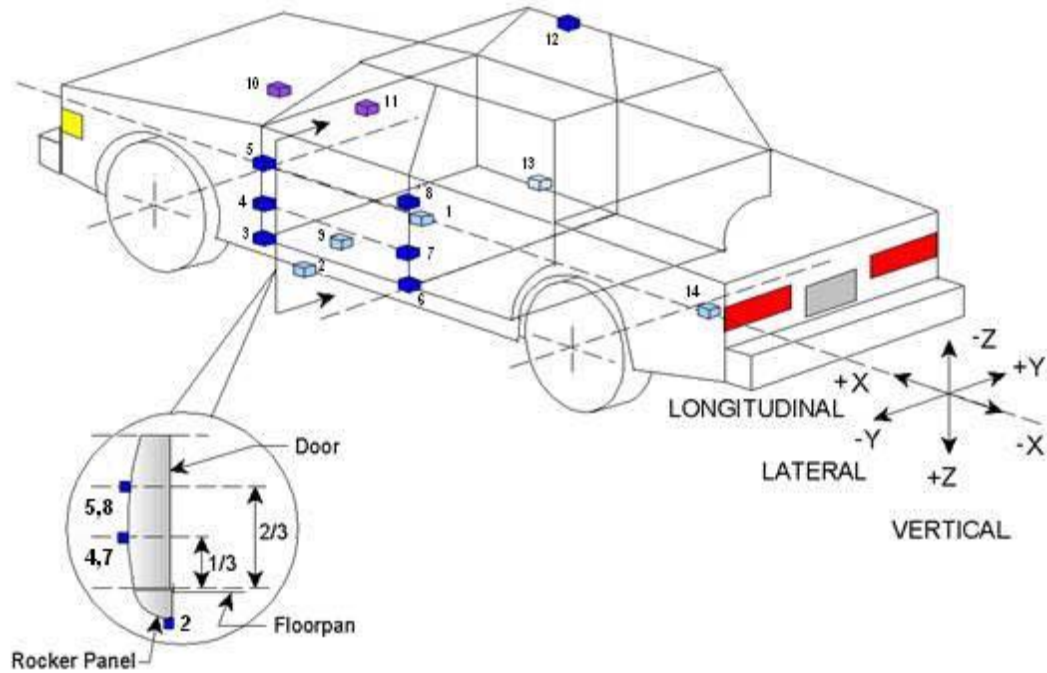
INSTRUMENTATION

	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 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15



Accelerometer/Sensor Location				
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2805	95	-420
2	Left Floor Sill	2890	-690	-279
3	A-Pillar Sill	3080	-690	-325
4	A-Pillar Low	3182	-790	-420
5	A-Pillar Mid	3175	-790	-800
6	B-Pillar Sill	2145	-690	-281
7	B-Pillar Low	2150	-785	-542
8	B-Pillar Mid	2110	-785	-845
9	Driver Seat Track	2310	-585	-293
10	Engine Top	3903	17	-753
11	Firewall	3580	0	-860
12	Right Roof	2055	580	-1418
13	Right Floor Sill	2894	690	-195
14	Rear Floorpan	1045	0	-458

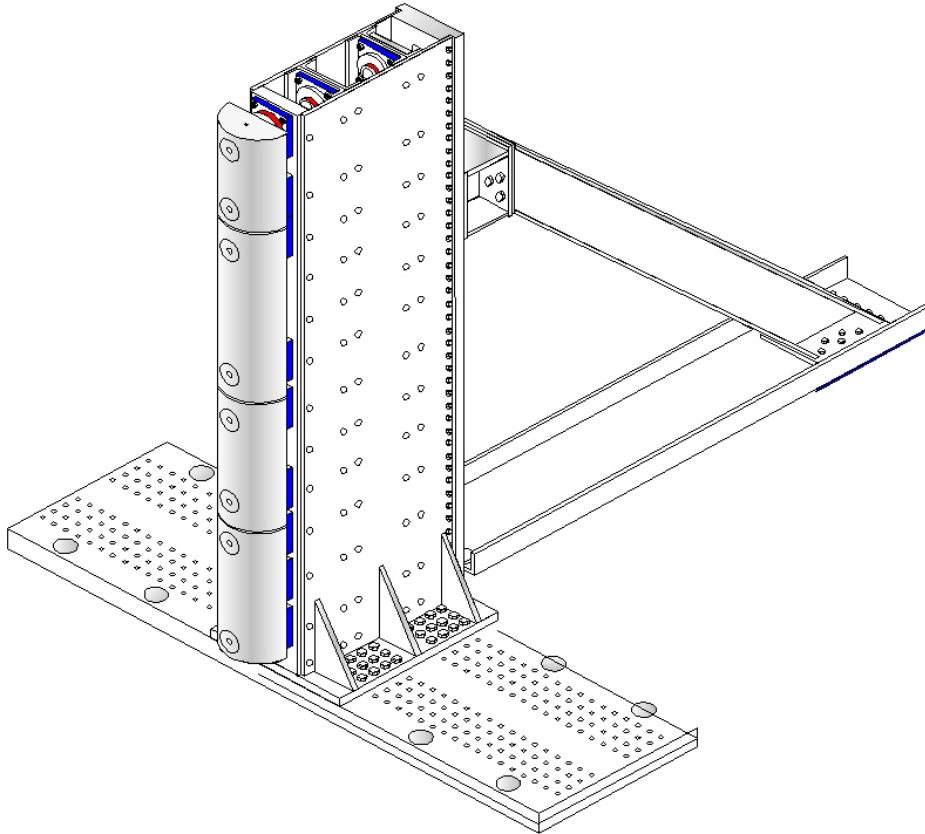
Reference: X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2016 Volkswagen Golf SportWagen
Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
Test Date: 1/27/15

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 Volkswagen Golf SportWagen
Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
Test Date: 1/27/15

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	SCAB
Top of Head	SCAB
Left Side of Head	SCAB/Head Restraint
Back of Head	SCAB/Head Restraint
Left Shoulder	Torso Pelvis Airbag
Upper Torso	Seat Bolster
Lower Torso	Seat Bolster
Left Hip	Torso Pelvis AirBag/Door Panel
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	Non Visible
Windshield Damage	None
Side Window Damage	Front Window Shattered
Other Notable Effects	None

DATA SHEET NO. 8 (CONTINUED)
POST TEST OBSERVATIONS

Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

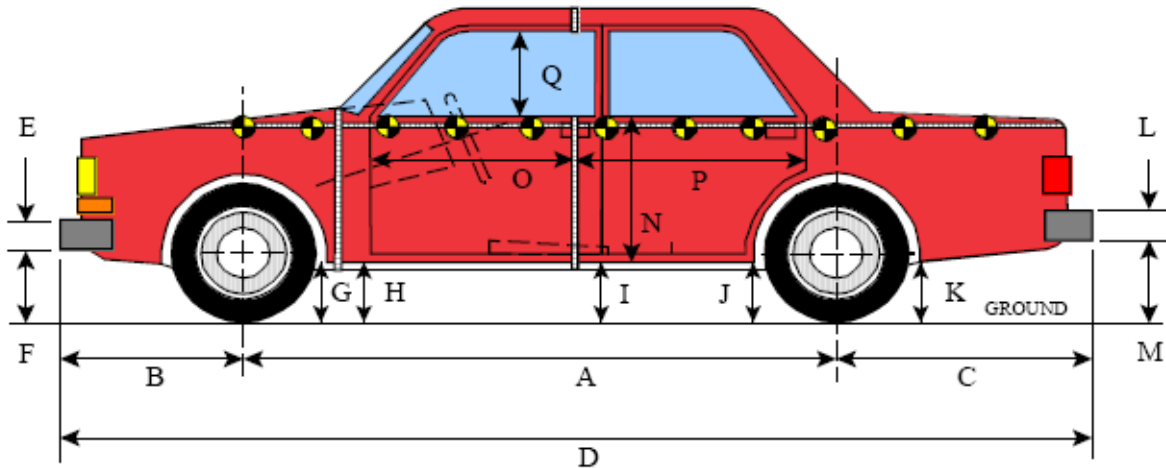
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1112
Actual Impact Point (Aft of Front Axle)	mm		1112
Horizontal Offset (+ forward / - rearward)	mm	+/- 38 of Intended Impact point	0
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	32.47
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.44

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15



LEFT SIDE VIEW

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

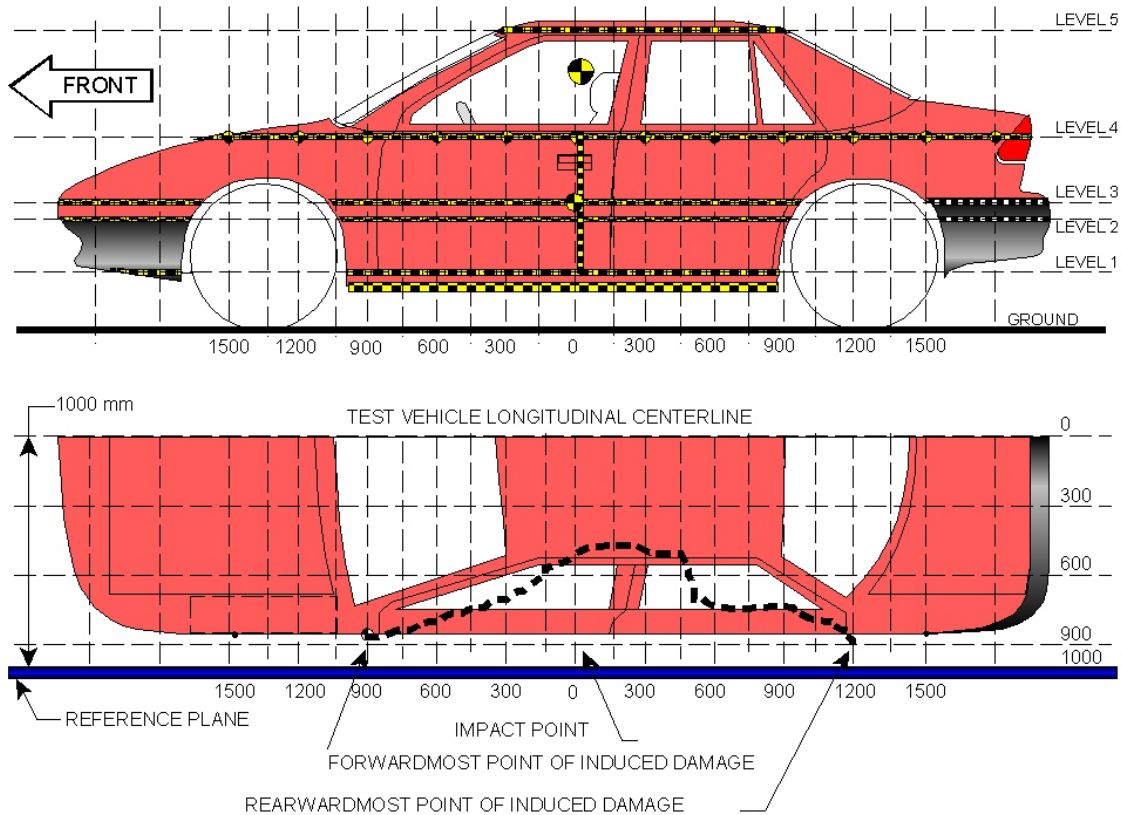
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2628	2628	0
B	Front Axle to Front Surface of Vehicle	854	854	0
C	Rear Axle to Rear Surface of Vehicle	1079	1079	0
D	Total Length at Centerline	4561	4561	0
E	Front Bumper Thickness	115	115	0
F	Front Bumper Bottom to Ground	430	443	-13
G	Sill Height at Front Wheel Well	270	289	-19
H	Sill Height at Front Door Leading Edge	274	286	-12
I	Sill Height at B-Pillar	275	312	-37
J1	Sill Height at Rear Wheel Well	259	310	-51
J2	Pinch Weld Height at Rear Wheel Well	182	242	-60
K	Sill Height Aft of Rear Wheel Well	270	330	-60
L	Rear Bumper Thickness	130	130	0
M	Rear Bumper Bottom to Ground	394	442	-48
N	Sill Height to Bottom of Front Window Sill	698	710	-12
O	Front Door Leading Edge to Impact CL	656	630	26
P	Rear Door Trailing Edge to Impact CL	1467	1451	16
Q	Front Window Opening	415	395	20
R	Right Side Length	4520	4520	0
S	Left Side Length	4521	4521	0
T	Vehicle Width at "B" Pillars	1770	1658	112

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15



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	346	320	0
2	Occupant H-Point	514	336	0
3	Mid-Door	628	348	0
4	Window Sill	892	319	0
5	Window Top	1401	93	150

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 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15

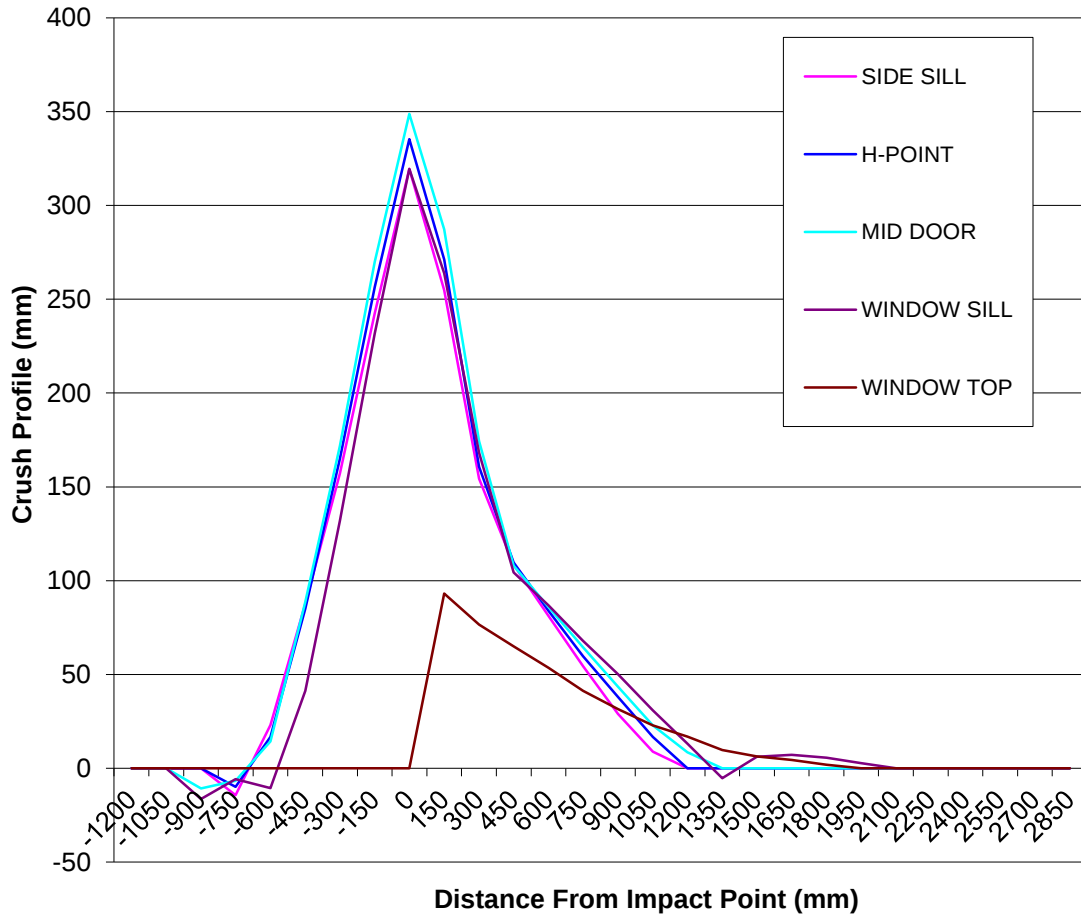
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900	0	0	894	786	0	0	0	904	803	0	0	0	-10	-17	0
-750	881	892	886	806	0	895	902	893	812	0	-14	-10	-7	-6	0
-600	871	881	884	820	0	848	864	869	831	0	23	17	15	-11	0
-450	875	882	887	829	0	787	797	798	788	0	88	85	89	41	0
-300	878	884	889	836	0	721	719	718	704	0	157	165	171	132	0
-150	879	885	891	842	0	637	628	621	610	0	242	257	270	232	0
0	880	885	891	846	0	560	549	543	527	0	320	336	348	319	0
150	879	883	891	849	562	624	612	604	585	469	255	271	287	264	93
300	878	882	890	850	575	723	721	715	682	498	155	161	175	168	77
450	875	879	887	850	578	767	769	779	746	513	108	110	108	104	65
600	872	876	884	848	577	791	792	798	761	523	81	84	86	87	54
750	868	871	880	847	572	814	811	815	779	531	54	60	65	68	41
900	864	866	874	844	568	835	828	830	794	537	29	38	44	50	31
1050	861	868	870	840	564	852	851	847	809	541	9	17	23	31	23
1200	0	0	878	874	556	0	0	870	860	539	0	0	8	14	17
1350	0	0	0	827	544	0	0	0	832	535	0	0	0	-5	9
1500	0	0	0	818	531	0	0	0	812	524	0	0	0	6	7
1650	0	0	0	808	512	0	0	0	801	508	0	0	0	7	4
1800	0	0	0	795	492	0	0	0	790	491	0	0	0	5	1
1950	0	0	0	780	0	0	0	0	777	0	0	0	0	3	0
2100	0	0	0	762	0	0	0	0	762	0	0	0	0	0	0
2250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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 Volkswagen Golf SportWagen
Test Program: SPNCAP Side Impact

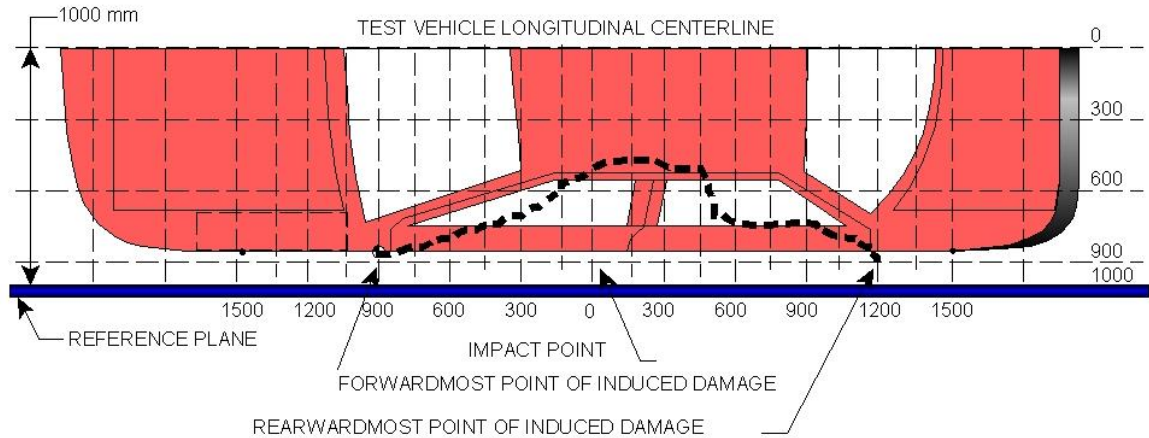
NHTSA No.: M20165801
Test Date: 1/27/15



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2016 Volkswagen Golf SportWagen
 Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
 Test Date: 1/27/15



VEHICLE DAMAGE PROFILE DISTANCES¹

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	1950	4	777	780	0
2	1500	5	524	531	7
3	900	4	794	844	50
4	450	2	769	879	110
5	0	3	543	891	348
6	-600	1	848	871	0

¹ DPD 1 and 6 defined as zero crush since the crush does not extend to the end of the vehicle.

DATA SHEET NO. 12

FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2016 Volkswagen Golf SportWagen

NHTSA No.: M20165801

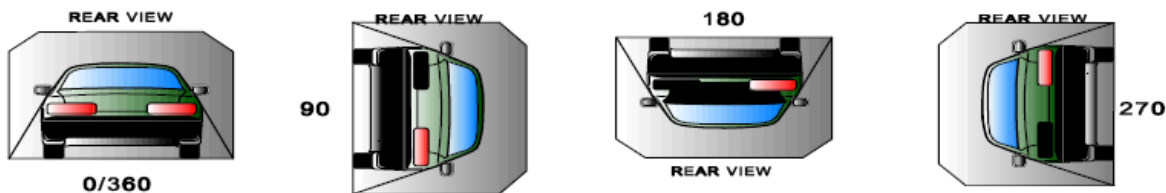
Test Program: SPNCAP Side Impact

Test Date: 1/27/15

Test Time: 15:37 Temperature: 20.6°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 Detected: 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

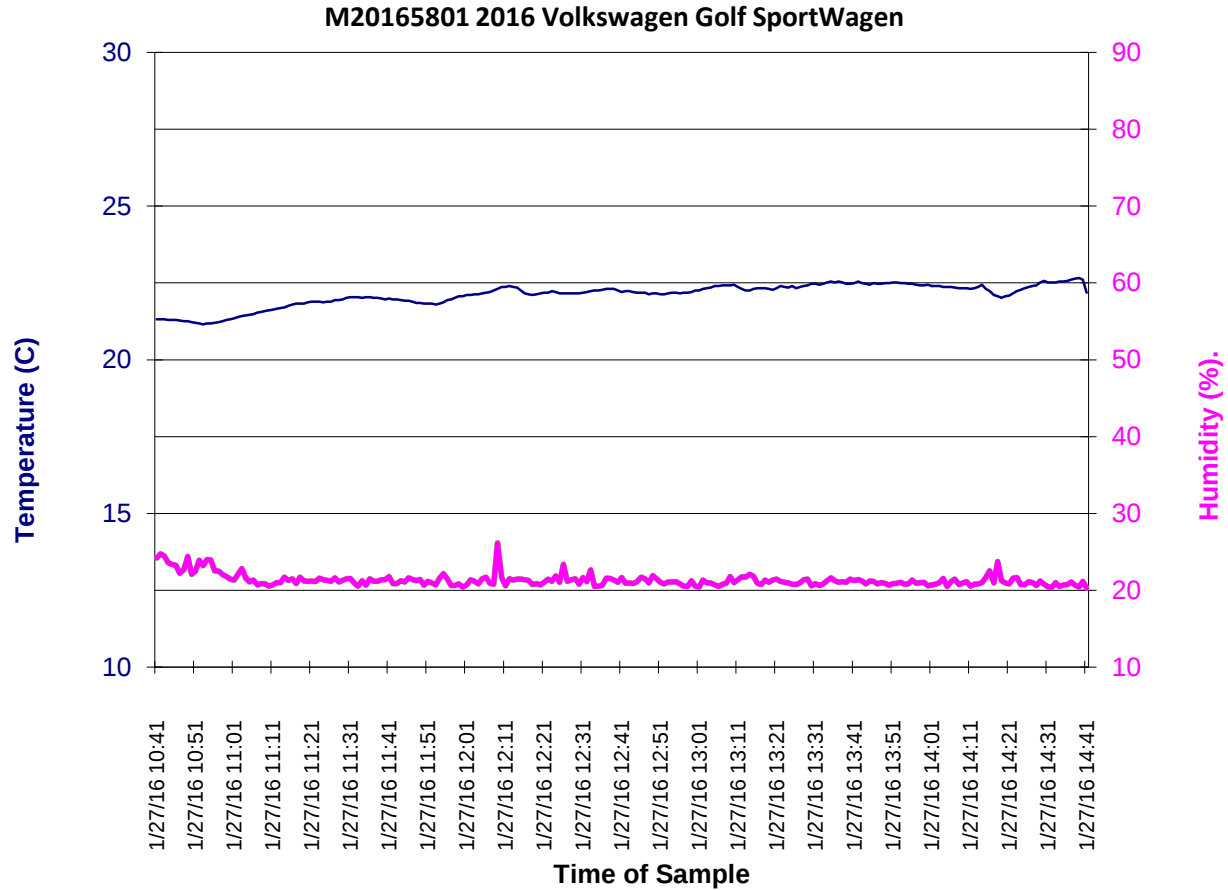
Test Phase	Spillage Location
0 to 90	None
90 to 180	None
180 to 270	None
270 to 360	None

DATA SHEET NO. 13

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2016 Volkswagen Golf SportWagen
Test Program: SPNCAP Side Impact

NHTSA No.: M20165801
Test Date: 1/27/15



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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2	As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle	A-4
3	Pre-Test Frontal View of Test Vehicle	A-5
4	Post-Test Frontal View of Test Vehicle	A-5
5	Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-6
6	Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-6
7	Pre-Test Left Side View of Test Vehicle	A-7
8	Post-Test Left Side View of Test Vehicle	A-7
9	Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-8
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15	Pre-Test Overhead View of Test Area	A-11
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17	Pre-Test Left Side View of Pole Positioned Against Side of Vehicle	A-12
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21	Pre-Test Front Close-Up View of Dummy Head and Chest	A-14
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23	Pre-Test Left Side View of Dummy Showing Belt and Chalking	A-15
24	Pre-Test Left Side View of Dummy Shoulder and Door Top View	A-15
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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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29	Pre-Test Overhead View of Dummy Thighs on Seat Pan	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

TABLE OF PHOTOGRAPHS (CONTINUED)

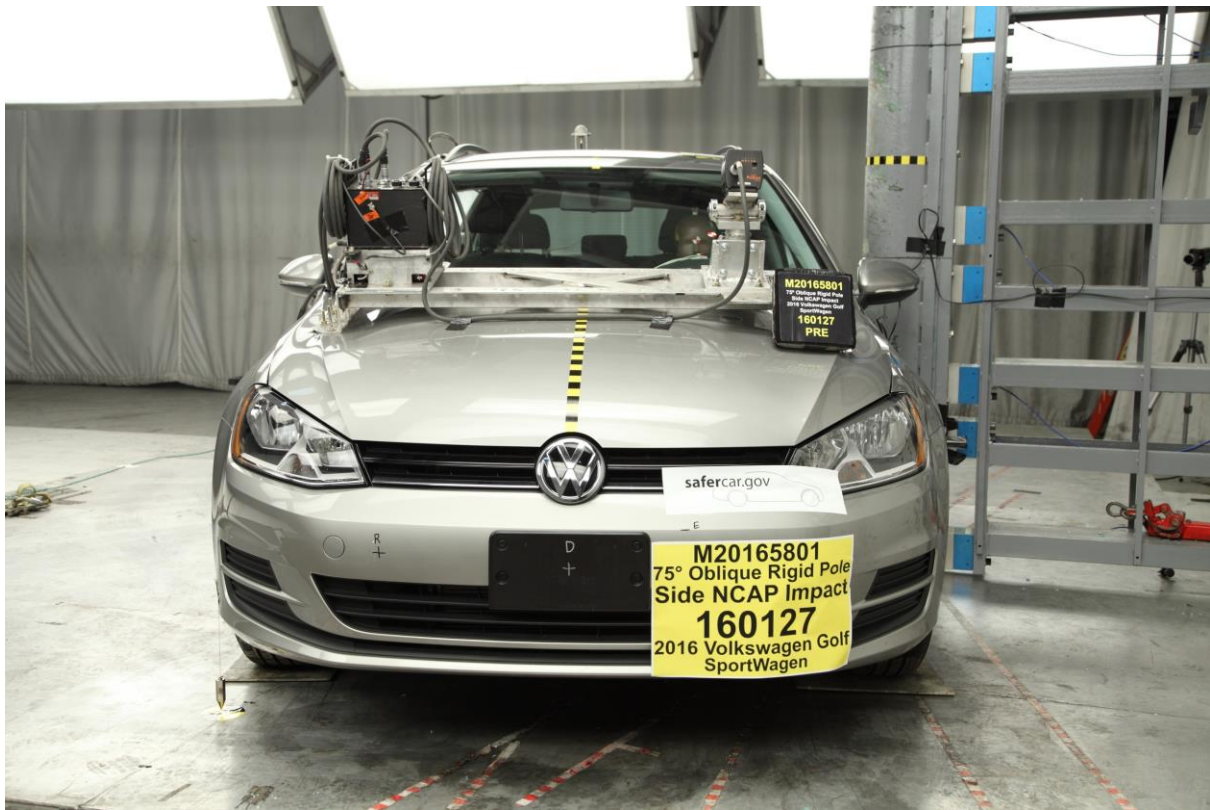
No.	Description	Page
35	Pre-Test View of Disengaged Parking Brake	A-21
36	Pre-Test View of Parking Brake	A-21
37	Pre-Test Close-Up Left Side View of Driver Seat Track	A-22
38	Pre-Test Close-Up Left Side View of Driver Seat Back	A-22
39	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-23
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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
52	Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View	A-29
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60	Post-Test Pole Barrier Side View	A-33
61	Pre-Test Ballast View	A-34
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70	Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-38
71	Post-Test View of Shattered Vehicle Inner Door Panel	A-39



001 As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



002 As Delivered Left Rear $\frac{3}{4}$ 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 $\frac{3}{4}$ View of Test Vehicle



006 Post-Test Left Front $\frac{3}{4}$ 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 $\frac{3}{4}$ View of Test Vehicle



010 Post-Test Left Rear $\frac{3}{4}$ 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



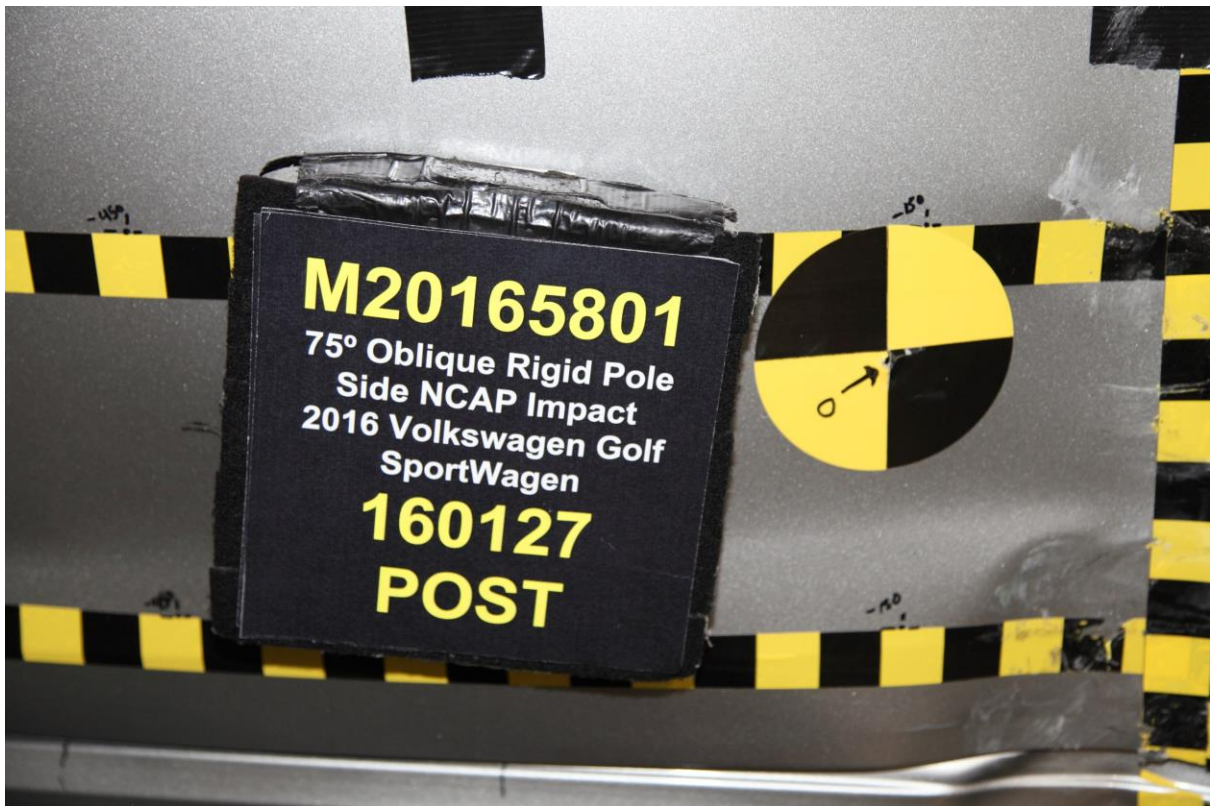
017 Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



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



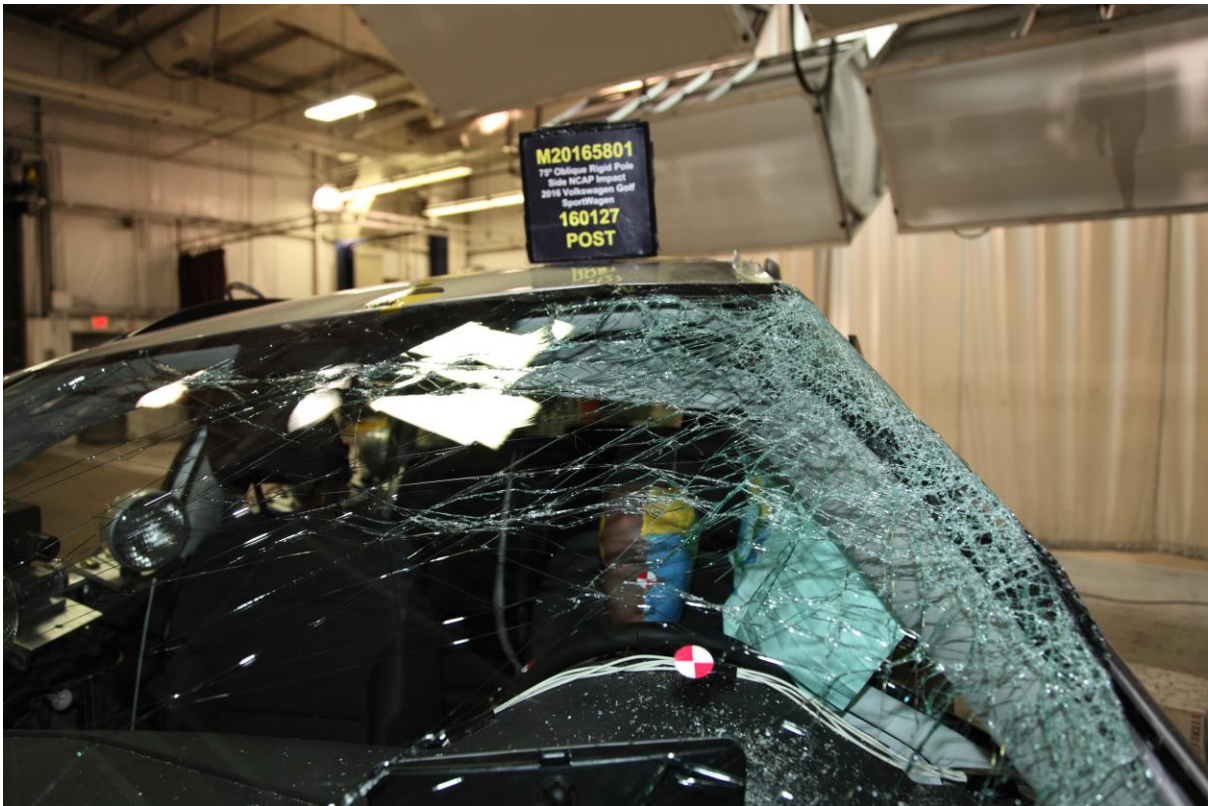
019 Pre-Test Close-Up View of Impact Point Target



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



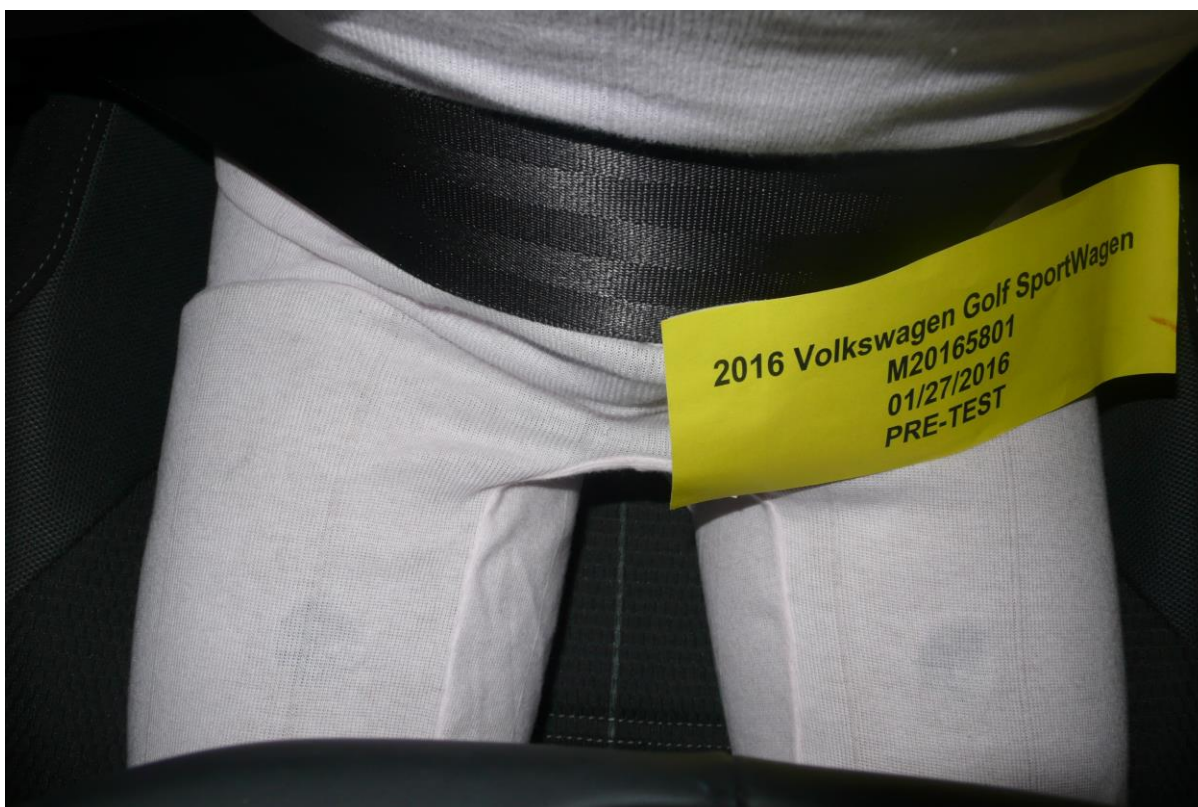
026 Pre-Test Front View of Seat Back Prior to Dummy Positioning



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



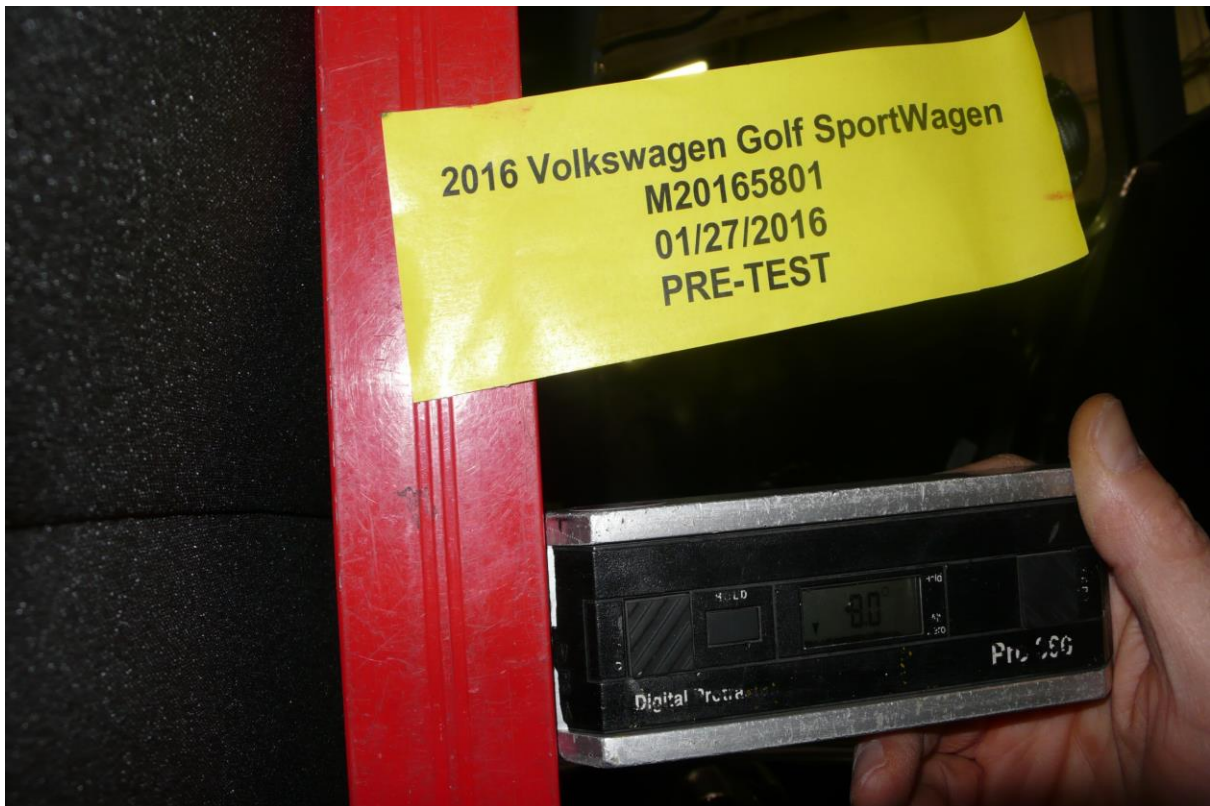
035 Pre-Test View of Disengaged Parking Brake



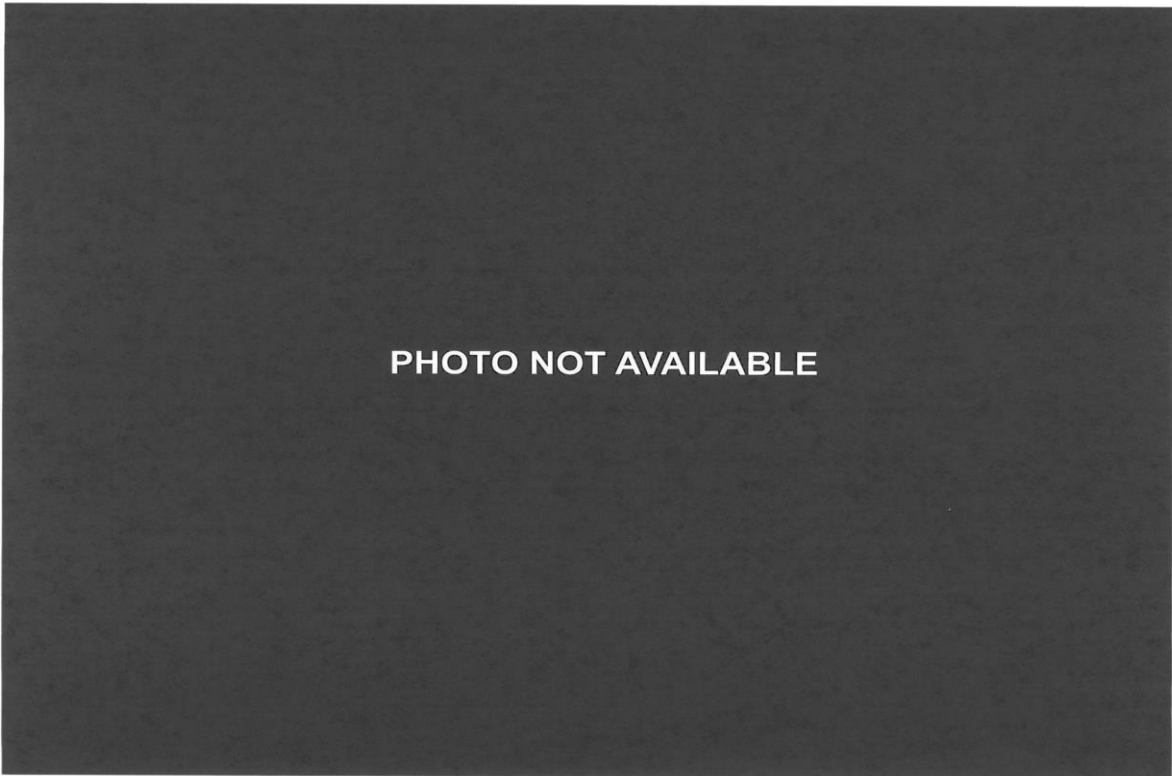
036 Pre-Test View of Parking Brake



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



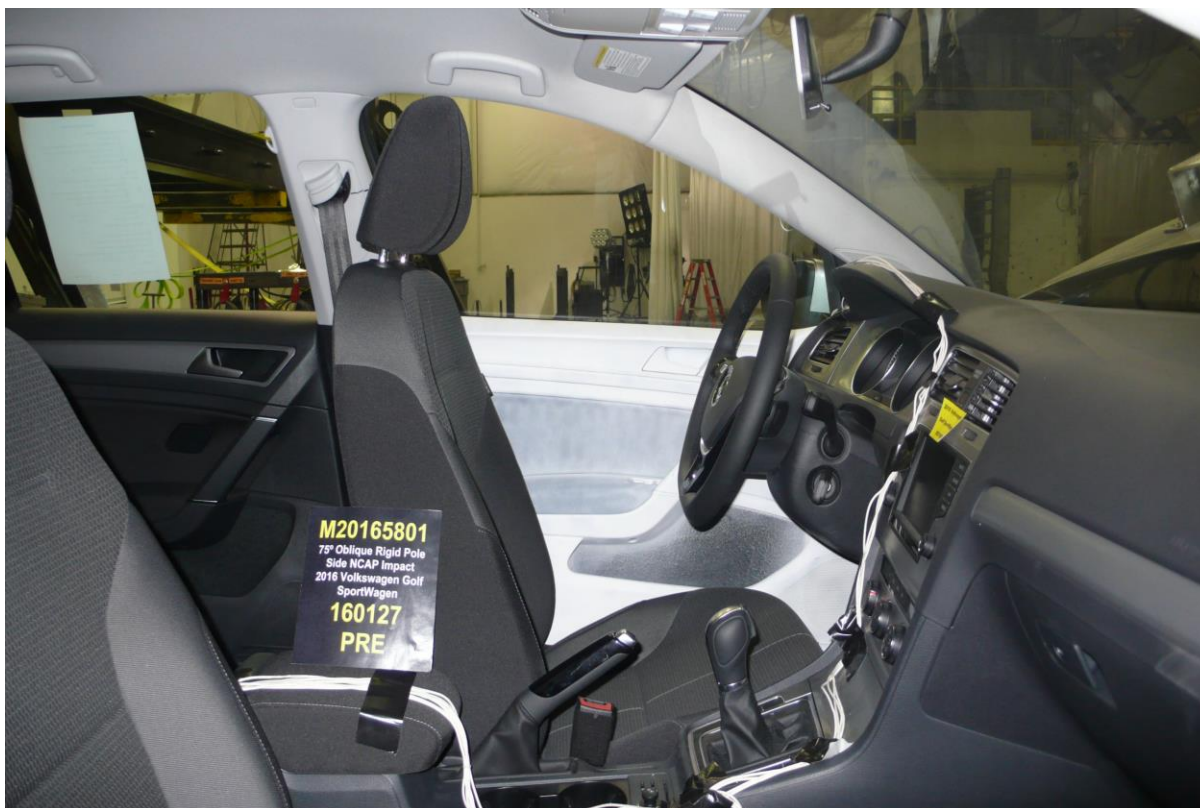
041 Post-Test Dummy and Door Clearance View



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



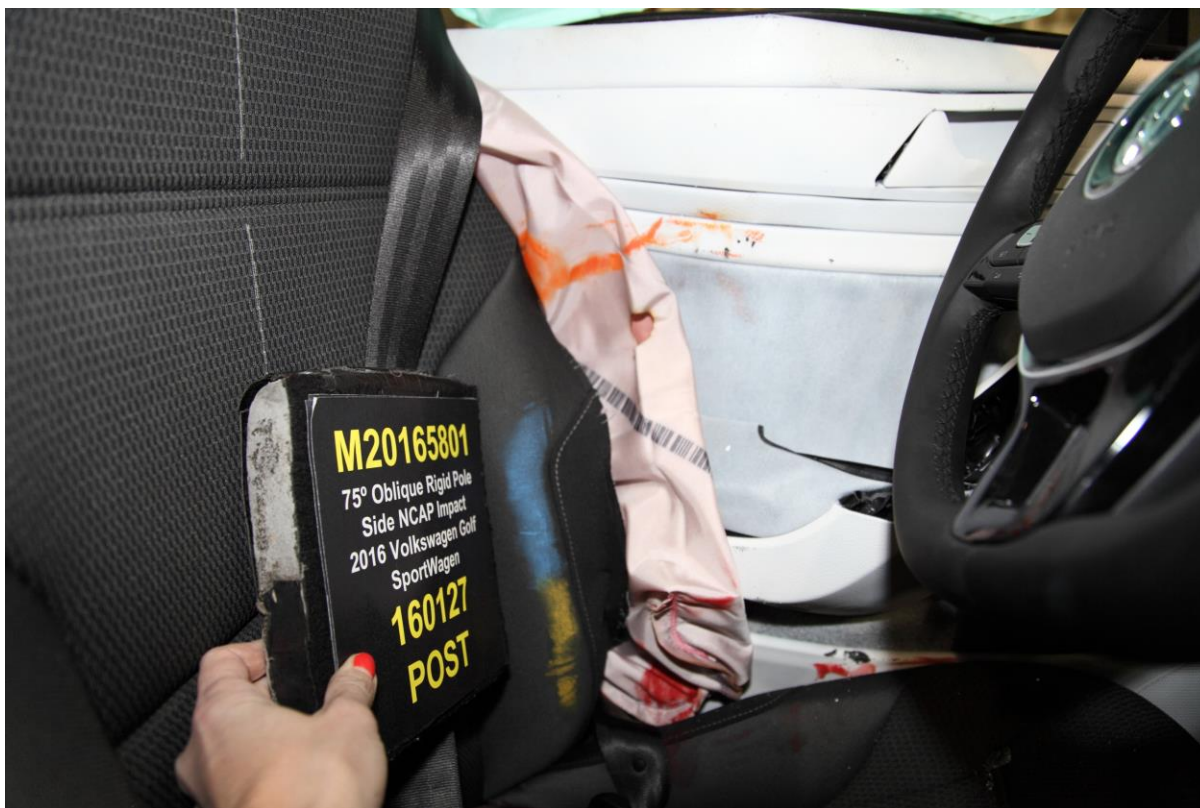
045 Post-Test Inner Driver Door Panel View Showing Dummy Contact Location



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



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



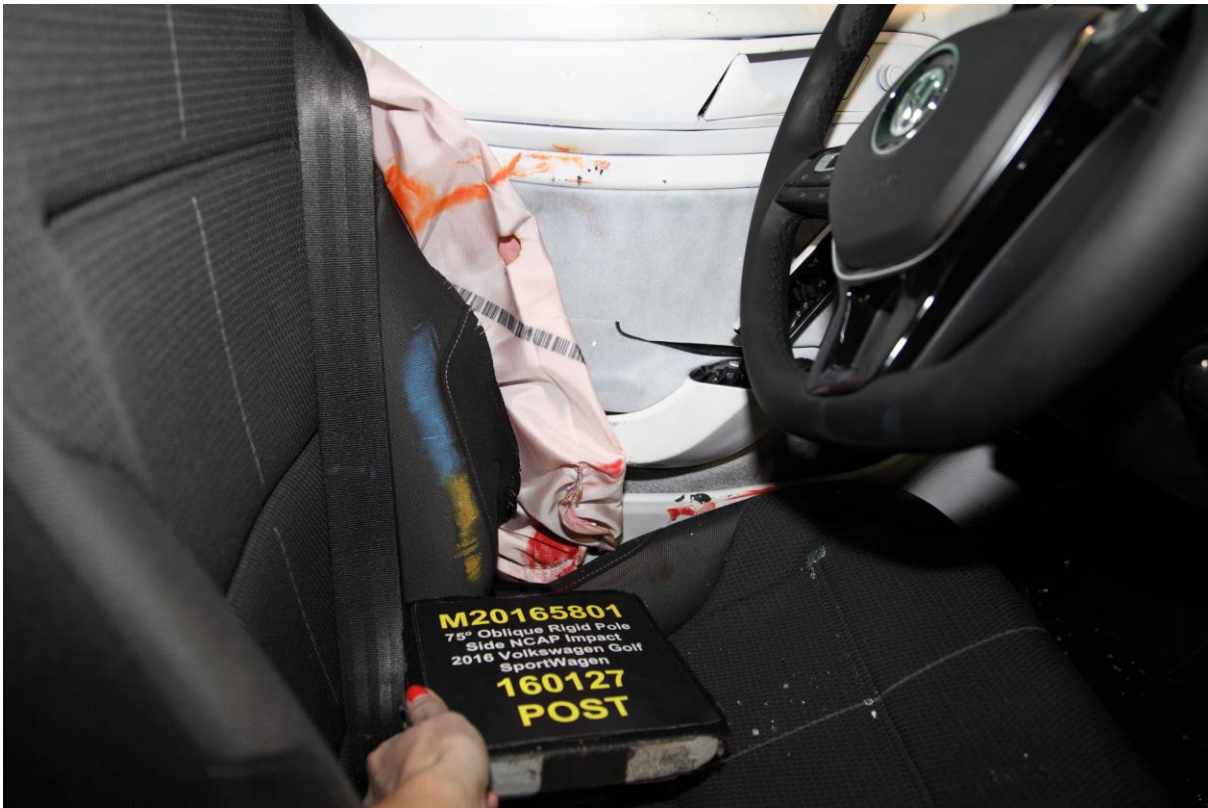
048 Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View

PHOTO NOT APPLICABLE

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



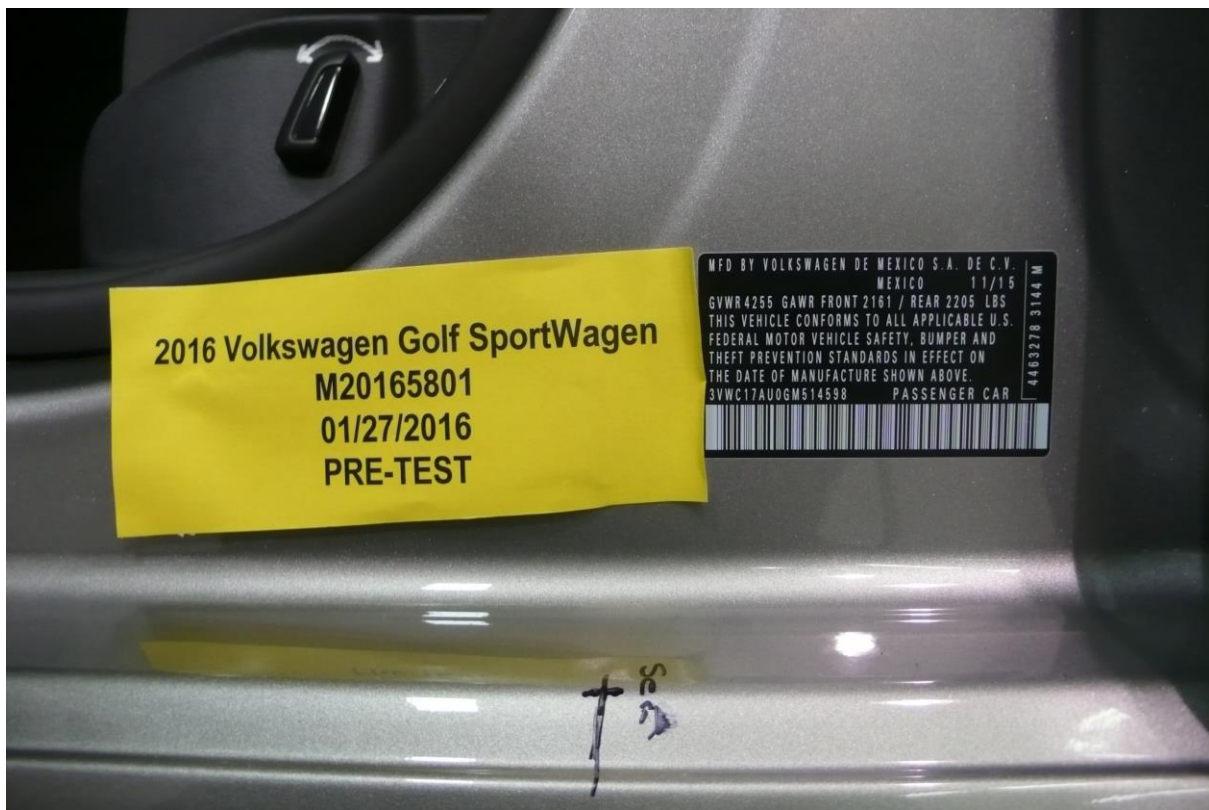
052 Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



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



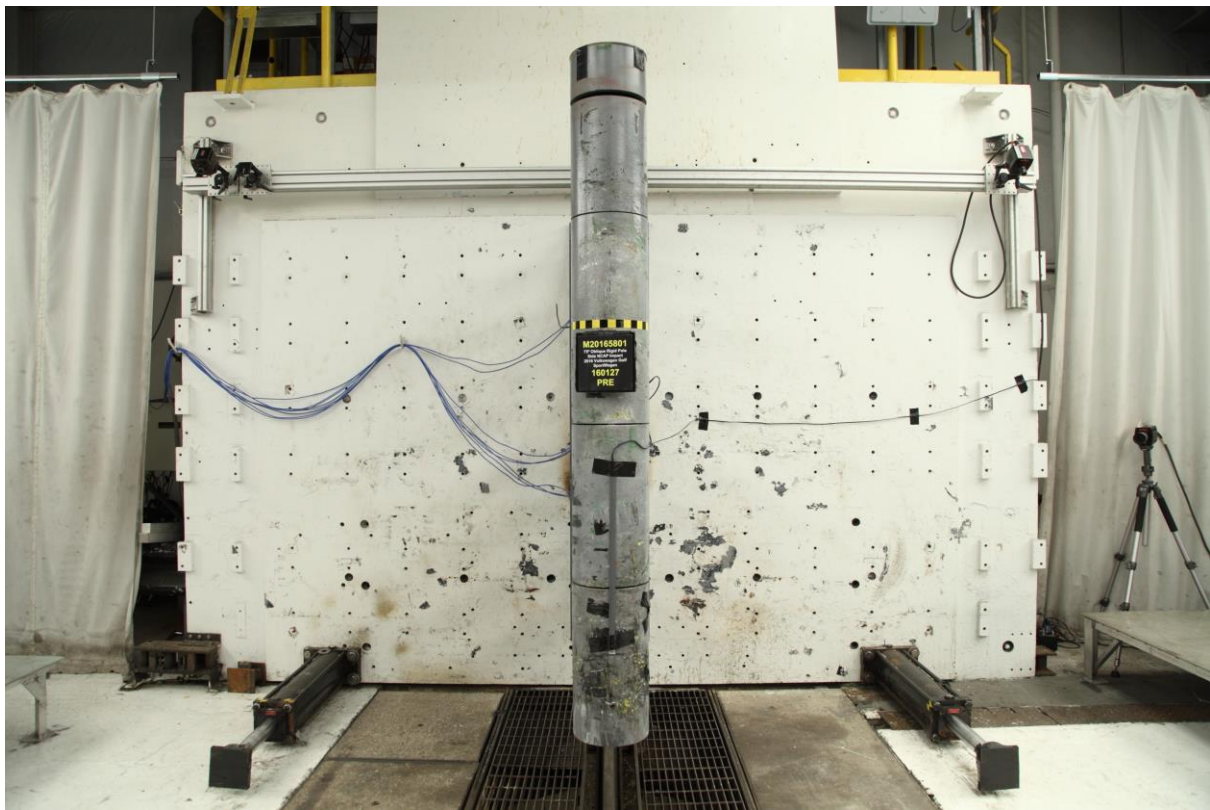
054 Post-Test View of Fuel Filler Cap or Fuel Filler Neck



055 Close-Up View of Vehicle Certification Label



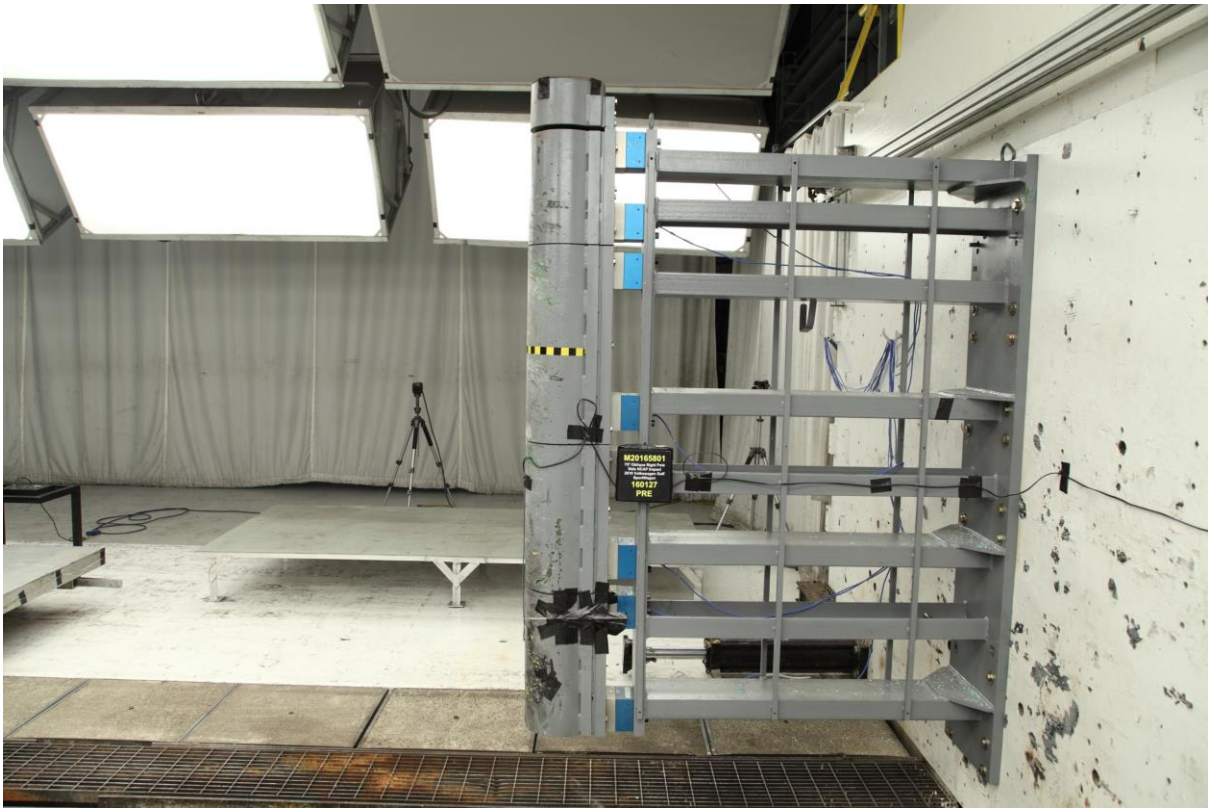
056 Close-Up View of Vehicle Tire Information Placard or Label



057 Pre-Test Pole Barrier Front View



058 Post-Test Pole Barrier Front View



059 Pre-Test Pole Barrier Side View



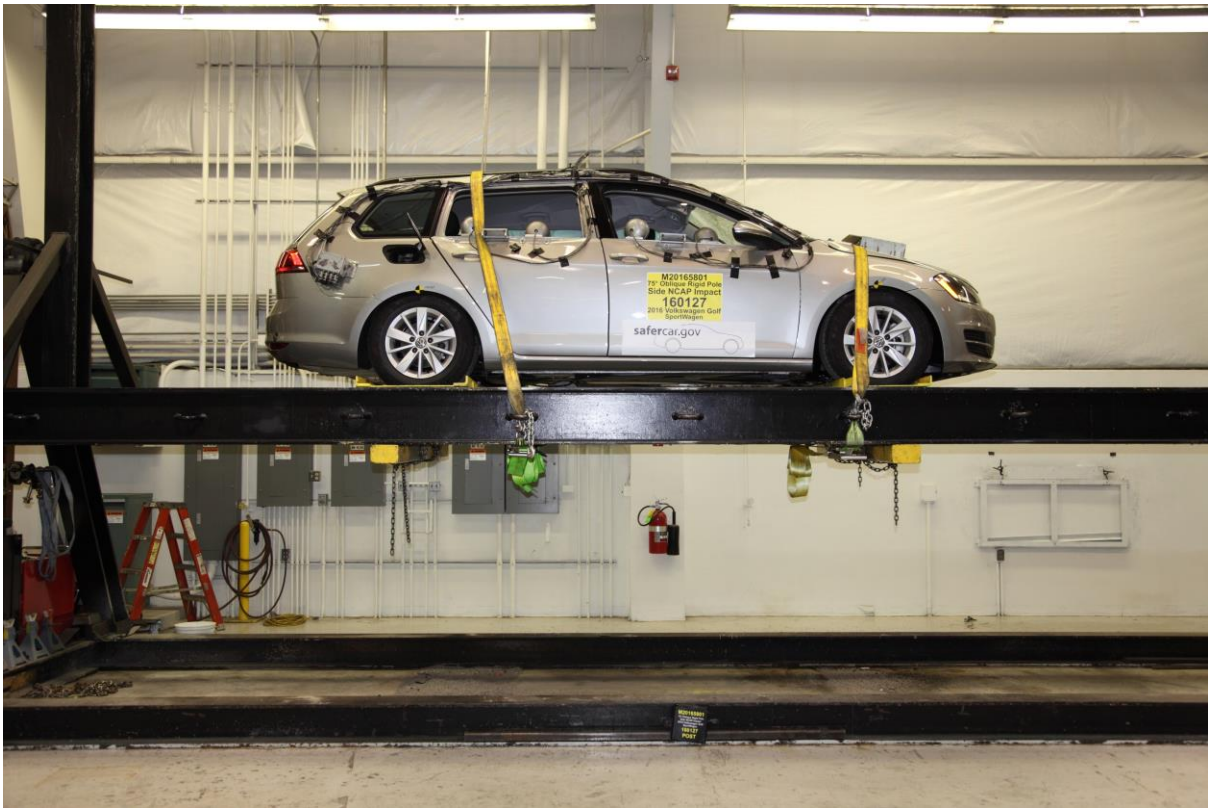
060 Post-Test Pole Barrier Side View



061 Pre-Test Ballast View



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



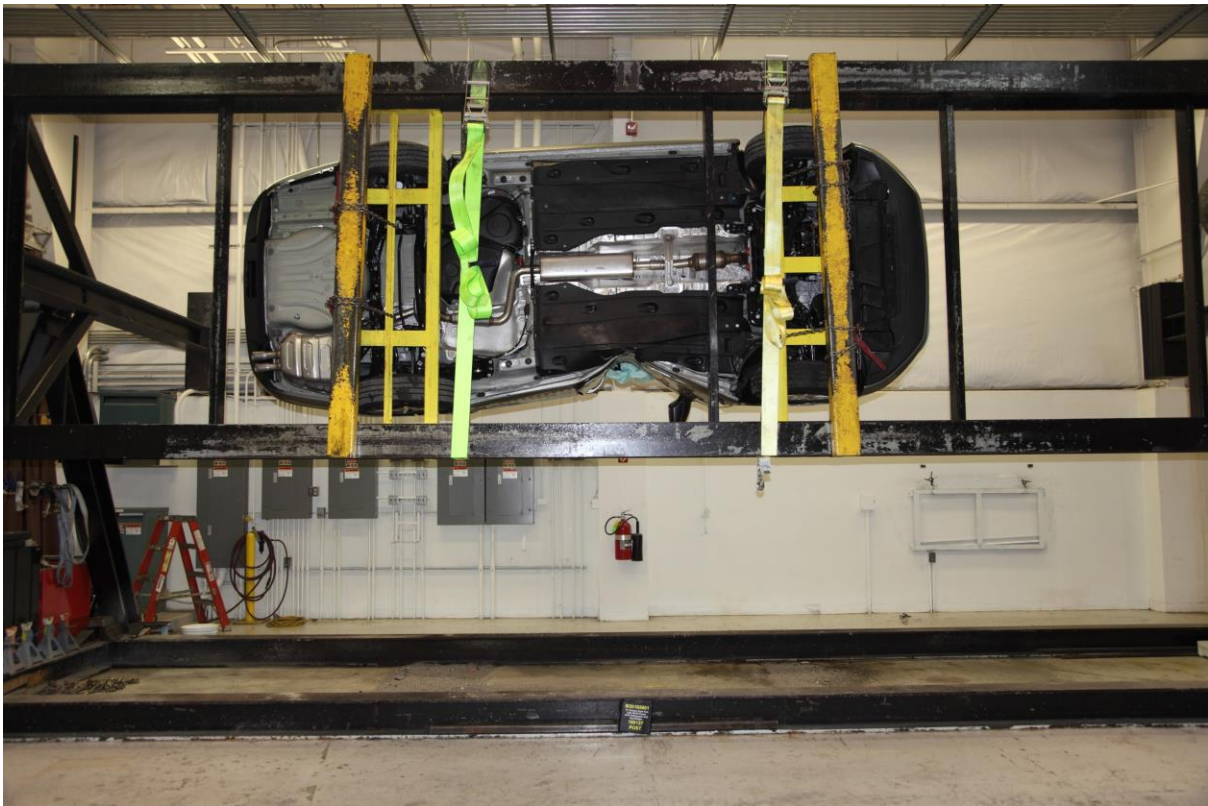
063 FMVSS No. 301 Static Rollover 0 Degrees



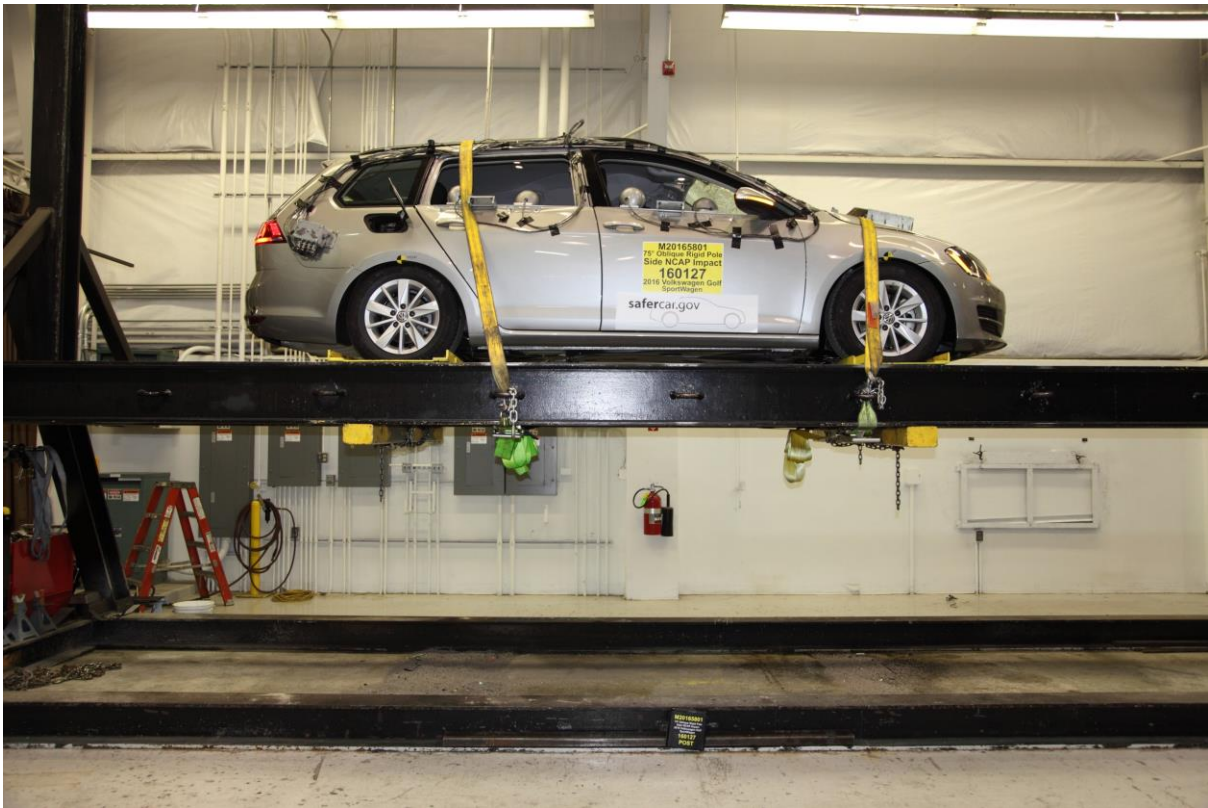
064 FMVSS No. 301 Static Rollover 90 Degrees



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

2016 Golf SportWagen TSI® S

Tungsten Silver Metallic Exterior Titan Black Cloth Interior

The German-Tuned Wagon.



STANDARD FEATURES (unless replaced by options)

PERFORMANCE

- 1.8L TSI® DOHC 16V TURBO 4-CYLINDER DIRECT INJECTION ENGINE
- PARTIAL ZERO EMISSIONS VEHICLE (PZEV)
- FOUR-WHEEL 48V/EPSON/INTELLIGENT SUSPENSION
- SERVOTRONIC® ELECTRO-MECHANICAL POWER STEERING

SAFETY FEATURES

- FRONT & SIDE AIRBAG SUPPLEMENTAL RESTRAINT SYSTEMS FOR DRIVER & FRONT PASSENGER
- SIDE CURTAIN PROTECTION HEAD IMPACT AIRBAGS
- 3-POINT SAFETY BELTS, ALL SEATING POSITIONS
- ANTI-LOCK BRAKING SYSTEM (ABS) W/ DISC BRAKES
- ELECTRONIC STABILITY CONTROL (ESC)
- INTELLIGENT CRASH RESPONSE SYSTEM (ICRS)
- LOWER ANCHORS & TETHERS FOR CHILDREN (LATCH)
- TIRE PRESSURE MONITORING SYSTEM (TPMS)

EXTERIOR

- 17" ALLOY WHEELS W/ ALL-SEASON TIRES
- HALOGEN HEADLIGHTS W/ DAYTIME RUNNING LIGHTS (DRL)
- HEATED, FOLDABLE, POWER ADJUSTABLE SIDE MIRRORS
- BLACK ROOF RAILS

INTERIOR

- CLIMATE MANUAL CLIMATE CONTROL
- 4-WAY TELESCOPING, MULTIFUNCTION STEERING WHEEL
- LEATHER-UPPERED STEERING WHEEL, BRAKE LEVER & SHIFT KNOB
- MANUAL FRONT SEATS W/ POWER RECLINE
- FRONT SEAT LUMBAR SUPPORT ADJUSTMENT
- SPLIT-FOLDING REAR SEAT W/ ARMREST & PASS-THROUGH CLOTH SEATING SURFACES
- FRONT CENTER CONSOLE W/ ARMREST & CUPHOLDERS
- ILLUMINATED VANITY MIRRORS, FRONT & REAR READING LIGHTS
- POWER WINDOWS W/ AUTO UP/DOWN
- CARPETED FLOOR MATS, FRONT & REAR

TECHNOLOGY

- REARVIEW CAMERA
- COMPOSITION MEDIA 6.5" TOUCHSCREEN AM/FM/HI RADIO W/ CD PLAYER, USB & AUX-IN
- 6-SPEAKER SOUND SYSTEM
- BLUETOOTH® MOBILE TELEPHONE CONNECTIVITY
- SIRIUSXM® SATELLITE RADIO (W/ LIMITED TIME SUBSCRIPTION)
- CRUISE CONTROL
- MULTIFUNCTION DISPLAY W/ TRIP COMPUTER
- POWER DOOR LOCKS W/ REMOTE

Manufacturer's Suggested Retail Price: \$22,725.00

VW CAR-NET® EQUIPPED. Features include:

- App-Connect (Smartphones Integration & Interface)
- Security & Service (Emergency Assistance, Remote Access)
- Vehicle Health (Limited emergency services temporarily active on delivery. Full trial available, subscription required. All services subject to Terms of Service available in glove box.)

DRIVER CARE PACKAGE

- Volkswagen New Vehicle Limited Warranty
 - 3 years/36,000 miles (whichever occurs first)
 - Powertrain Limited Warranty
 - 5 years/60,000 miles (whichever occurs first)
 - Limited Warranty against Corrosion Perforation
 - 12 years/120,000 miles (whichever occurs first)
- Please ask your dealer for a copy of the Volkswagen warranty booklet for details.
- 24-HOUR ROADSIDE ASSISTANCE
- 3 years/36,000 miles (whichever occurs first)
 - Towing, Jump Starts, Tire Changes, Out of Fuel, and Lock-Out
- Provided by a third party supplier

PACKAGES/OPTIONS

- Tungsten Silver Metallic Exterior
- Titan Black Cloth Interior
- Monsoon Motion (set of 4) Heavy Duty Trunk Liner with VW CarGo Blocks
- 6-Speed Automatic Transmission

No Charge

No Charge

No Charge

Destination Charge

\$820.00

Total Price: \$23,780.00

Fuel, license, title fees, taxes and dealer-installed accessories are not included.

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:	FOR THIS VEHICLE:
U.S./CANADIAN	FINAL ASSEMBLY POINT:
PARTS CONTENT: 4%	PUEBLA, MEXICO
MAJOR SOURCES OF FOREIGN	COUNTRY OF ORIGIN:
PARTS CONTENT:	ENGINE: MEXICO
MEXICO: 35%	TRANSMISSION: JAPAN

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

EPA DOT Fuel Economy and Environment

Gasoline Vehicle

Fuel Economy

29 MPG
combined city/hwy

25 city
35 highway

3.4 gallons per 100 miles

Small Station Wagons range from 20 to 105 MPG. The best vehicle rates 119 MPG.

You Save \$1,250
in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$1,550

Fuel Economy & Greenhouse Gas Rating (tailpipe only)

7 (tailpipe only)

Smog Rating (tailpipe only)

9 (tailpipe only)

This vehicle emits 305 grams of CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions. Learn more at fuel-economy.gov

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 26 MPG and costs \$9,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.00 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuel-economy.gov

Calculate personalized estimates and compare vehicles

SOLD TO: 402160
VOLKSWAGEN OF HIGHLAND PARK
1350 PARK AVE W
HIGHLAND PARK, IL 60035

SHIP TO: 402160
VOLKSWAGEN OF HIGHLAND PARK
1350 PARK AVE W
HIGHLAND PARK, IL 60035

VIN: 3VWC17AUG6M514598
Port of Entry: HOUSTON

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score Not Rated

Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.

Frontal Crash Driver Passenger Not Rated

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

Side Crash Front Seat Rear Seat Not Rated

Based on the risk of injury in a side impact.

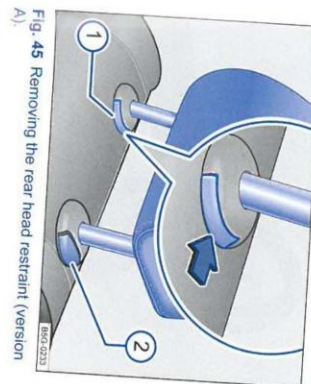
Rollover Not Rated

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

Who better to get you into a Volkswagen than us? Volkswagen Credit

Removing and reinstalling the rear head restraints



Please first read and note the introductory information and heed the WARNINGS on page 68.

All seats are equipped with head restraints. The rear center head restraint is designed only for the center seat on the rear bench. Therefore, only install the center head restraint in the center position. For instructions on removing and reinstalling the front head restraints, see page 74, Removing and reinstalling the front head restraints.

Removing the rear head restraint (Version A)

- Unlock the backrest of the rear seat bench and fold it forward → page 159, Luggage compartment.
- Pull the head restraint all the way up → A.
- Push button → fig. 45 (1) in the direction of the arrow and hold it in this position.
- At the same time press button (2) while a second person pulls out the head restraint completely, so that it locks securely.

Removing the rear head restraint (Version B)

- Unlock the backrest of the rear seat bench and fold it forward → page 159, Luggage compartment.
- Pull the head restraint all the way up → A.
- If necessary, press the flat blade of the screwdriver from the vehicle tool kit into the slit of the trim cap → fig. 46 (2) in the direction of the arrow and hold it in this position.
- At the same time press button (2) while a second person pulls out the head restraint completely, so that it locks securely.



Reinstalling the rear head restraint (both versions)

- Unlock the backrest of the rear seat bench and fold it forward → page 159, Luggage compartment.
- Position head restraint properly over the head restraint guides of the respective seat backrest and insert the head restraint into the guides.
- Push the head restraint down while pressing button → fig. 45 (2) or → fig. 46 (2).
- Fold the backrest of the rear seat bench back so that it locks securely.
- Adjust the head restraint according to the occupant's size → page 73, Adjusting the front and rear head restraints.

WARNING

Driving without head restraints or with improperly adjusted head restraints increases the risk of serious injuries in a collision.

- Always drive with the head restraints in place and properly adjusted to help minimize the risk of neck injury in a crash.
- Always reinstall head restraints as soon as possible so that vehicle occupants are properly protected.

NOTICE

When removing or reinstalling the head restraint, take care that the head restraint does not strike the headliner or other parts of the vehicle. The headliner or other parts of the vehicle could otherwise be damaged.

Sitting properly and safely

75

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

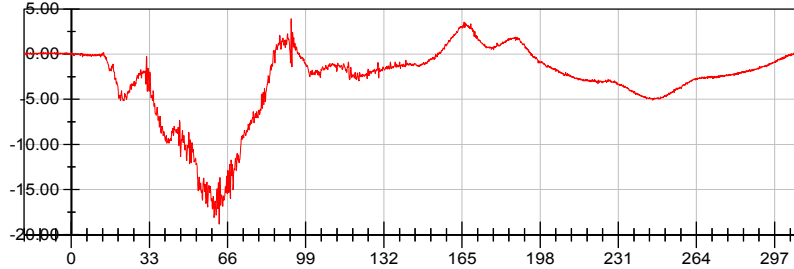
Position #1 SID IIs Dummy (DI8818)

Test Date: 01/27/2016

Test Lab: CTF

Test Number: 160127 (M20165801)

Head Accel X (g) vs. Time [ms]



<Max>

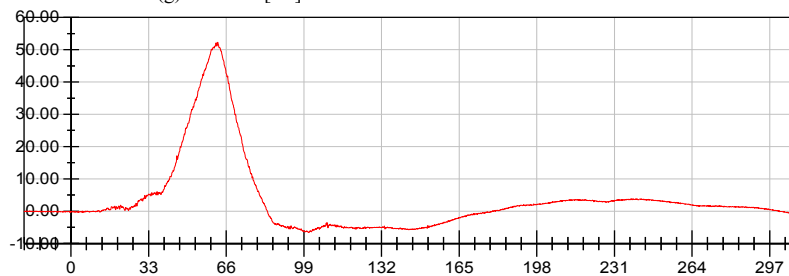
3.91 g at 92.88 ms

<Min>

-18.83 g at 62.48 ms

CFC_1000

Head Accel Y (g) vs. Time [ms]



<Max>

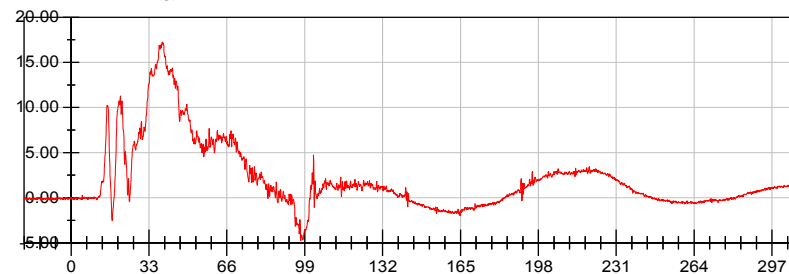
52.33 g at 62.40 ms

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-6.64 g at 101.12 ms

CFC_1000

Head Accel Z (g) vs. Time [ms]



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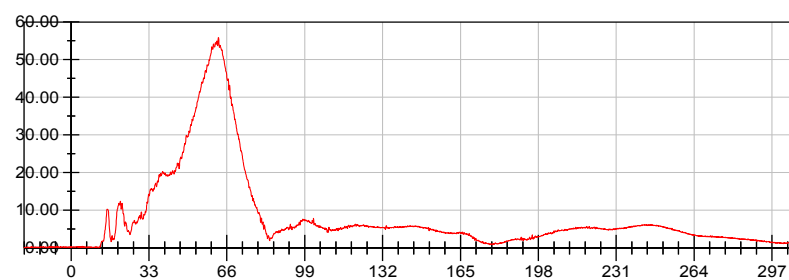
17.25 g at 38.72 ms

<Min>

-4.73 g at 97.28 ms

CFC_1000

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



<Max>

55.87 g at 62.40 ms

<Min>

0.03 g at -20.00 ms

CFC_1000



NHTSA

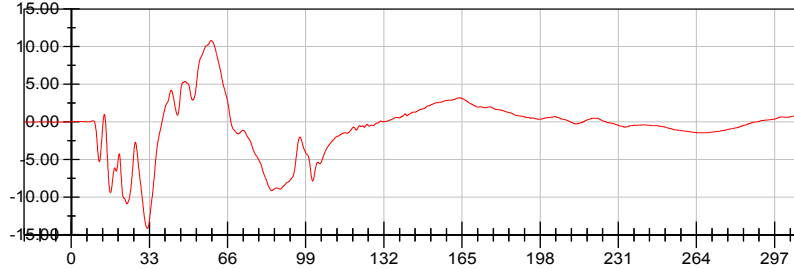
Test Lab: CTF

Test Number: 160127 (M20165801)

Position #1 SID IIs Dummy (DI8818)

Test Date: 01/27/2016

Abdominal Spine X (T12) (g) vs. Time [ms]



<Max>

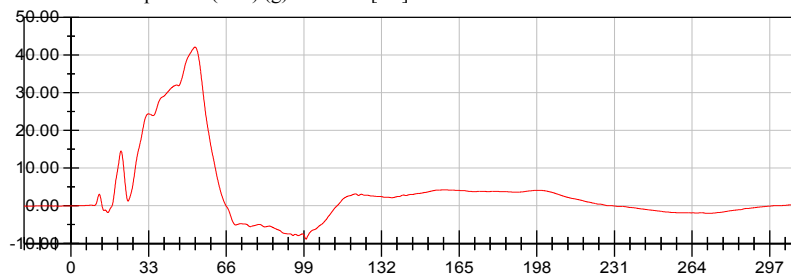
10.78 g at 59.12 ms

<Min>

-14.16 g at 32.08 ms

CFC_180

Abdominal Spine Y (T12) (g) vs. Time [ms]



<Max>

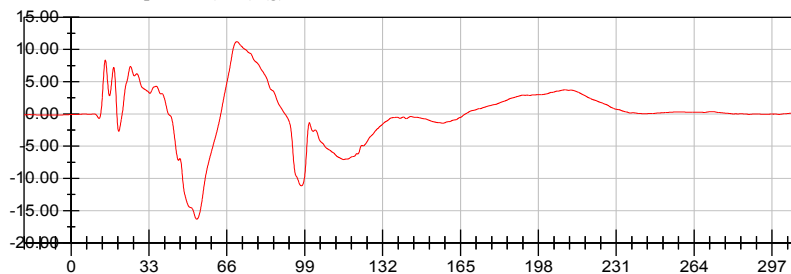
42.13 g at 52.72 ms

<Min>

-8.87 g at 99.92 ms

CFC_180

Abdominal Spine Z (T12) (g) vs. Time [ms]



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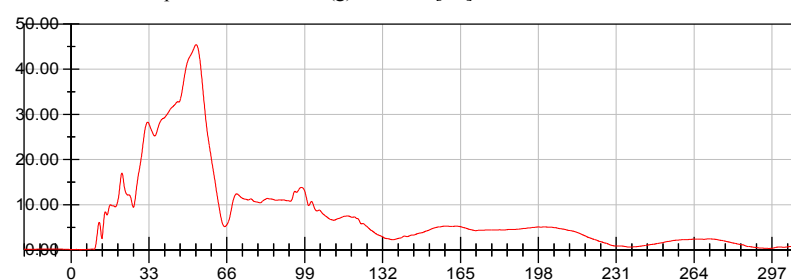
11.20 g at 70.24 ms

<Min>

-16.33 g at 53.28 ms

CFC_180

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



<Max>

45.43 g at 52.96 ms

<Min>

0.05 g at 4.00 ms

CFC_180



NHTSA

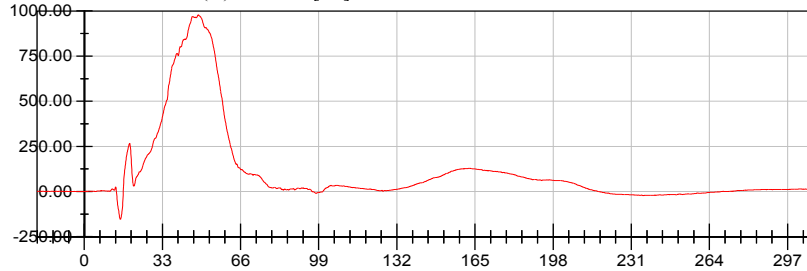
Test Lab: CTF

Test Number: 160127 (M20165801)

Position #1 SID IIs Dummy (DI8818)

Test Date: 01/27/2016

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



<Max>

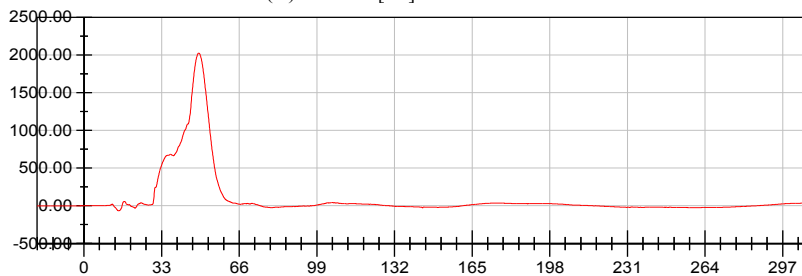
978.38 N at 48.16 ms

<Min>

-153.05 N at 15.20 ms

CFC_600

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



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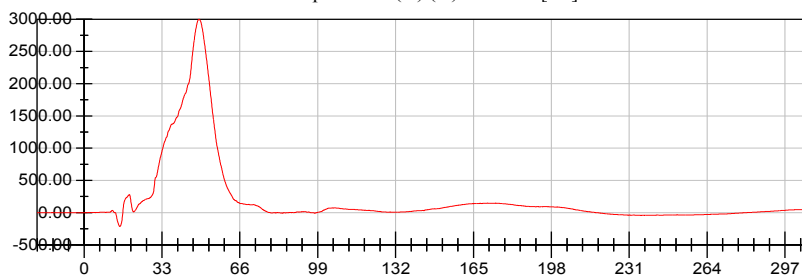
2,026.76 N at 48.72 ms

<Min>

-67.37 N at 14.80 ms

CFC_600

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



<Max>

2,998.50 N at 48.72 ms

<Min>

-215.83 N at 15.20 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

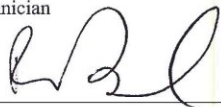
Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Iliac Force (N) vs. Time (ms)

Pre-Test Calibration Sheets
Driver S/N DI8818

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DI8818 Calibration No.20

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	779	Yes
B	Shoulder Pivot Height	437.0 - 453.0	439	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	201	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. 20-1

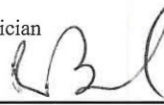
Test Date: 1/22/2016

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	16 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	135.0 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	3.9 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

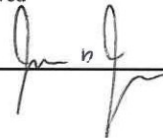
Test meets specifications.

Comments:

Technician



Approved



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

01.22.2016 13:04:32 235

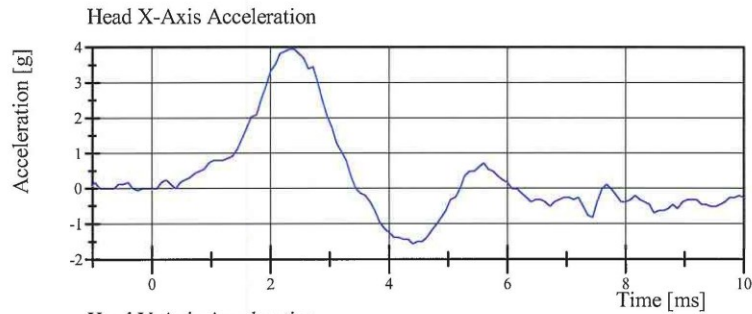


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 20-1

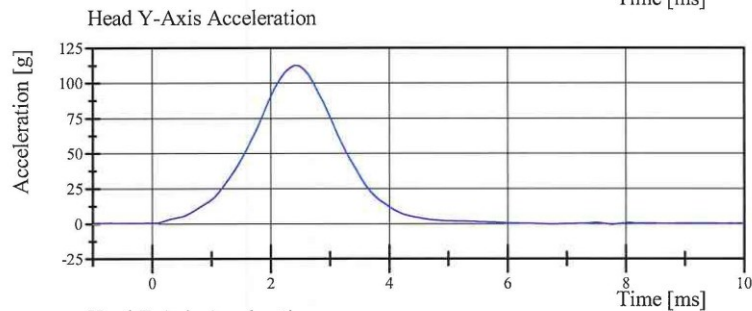
Test Date: 1/22/2016



Filter Class: CFC_1000

Max: 3.9 g at 2.3 ms

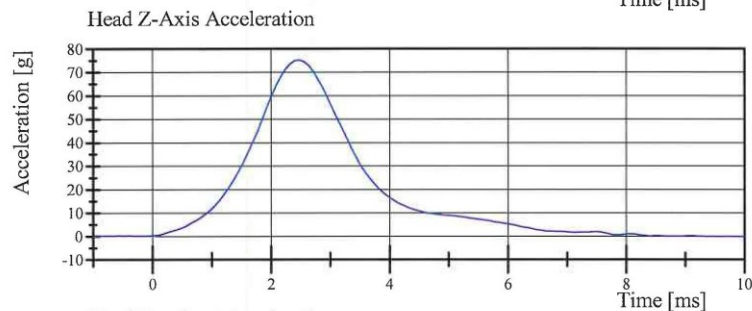
Min: -1.6 g at 4.4 ms



Filter Class: CFC_1000

Max: 112.2 g at 2.4 ms

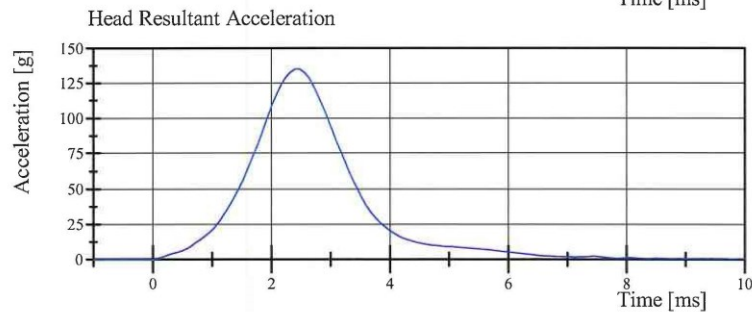
Min: -0.6 g at 7.8 ms



Filter Class: CFC_1000

Max: 75.2 g at 2.5 ms

Min: -0.1 g at 9.4 ms



Filter Class: CFC_1000

Max: 135.0 g at 2.4 ms

Min: 0.0 g at -0.8 ms

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

01.22.2016 13:04:39 235



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 20-1

Test Date: 1/22/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.601 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.496 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.847 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	5.219 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.849 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.855 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-73.7 deg	Yes
Time of Peak	50 - 70 ms	64.1 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	42.7 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	115.9 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.

01.22.2016 13:40:11 633

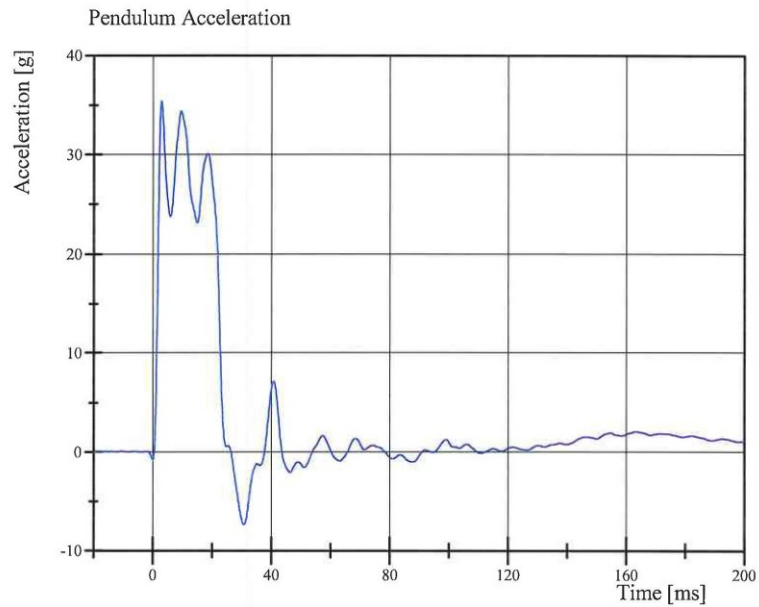


Transportation Research Center Inc.

Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 20-1

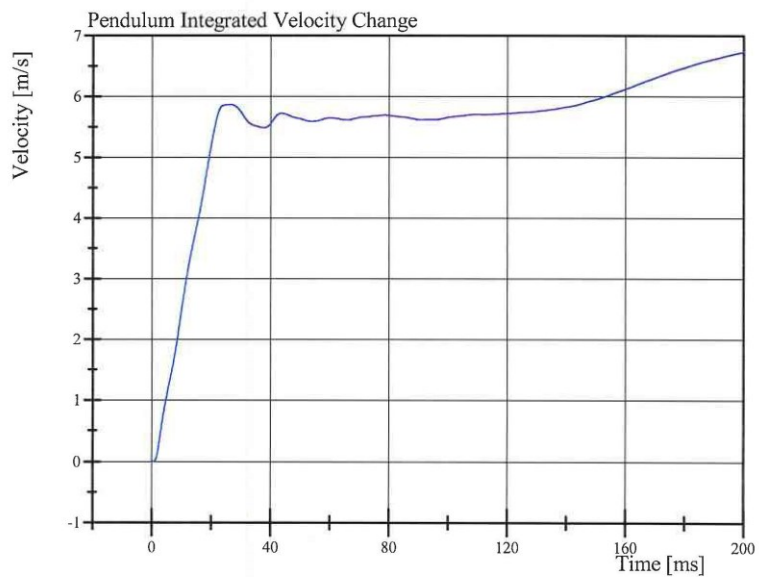
Test Date: 1/22/2016



Filter Class: CFC_180

Max: 35.3 g at 2.9 ms

Min: -7.4 g at 30.6 ms



Filter Class: CFC_180

Max: 6.7 m/s at 200.0 ms

Min: -0.0 m/s at 0.4 ms

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

01.22.2016 13:40:19 633

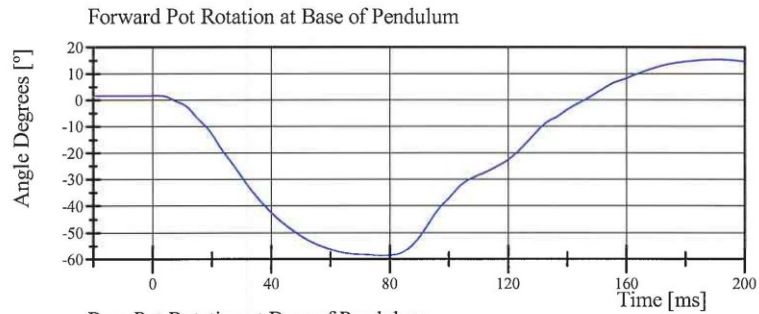


Transportation Research Center Inc.

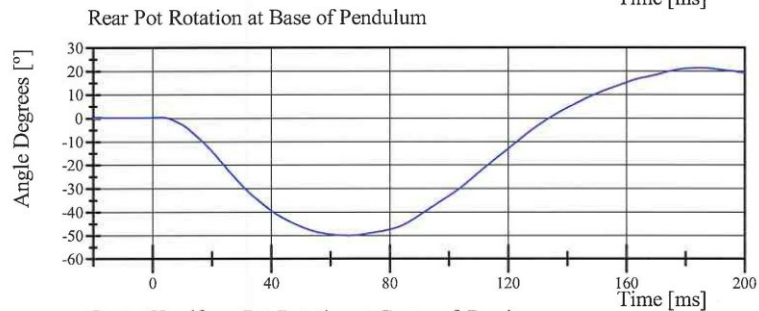
Left Lateral Neck

SID IIa Serial No. DI8818 Certification No. 20-1

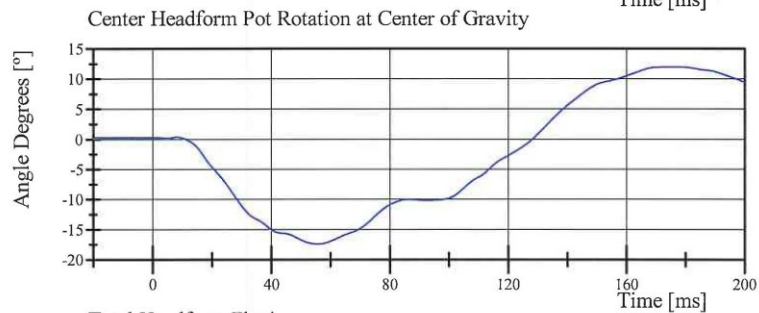
Test Date: 1/22/2016



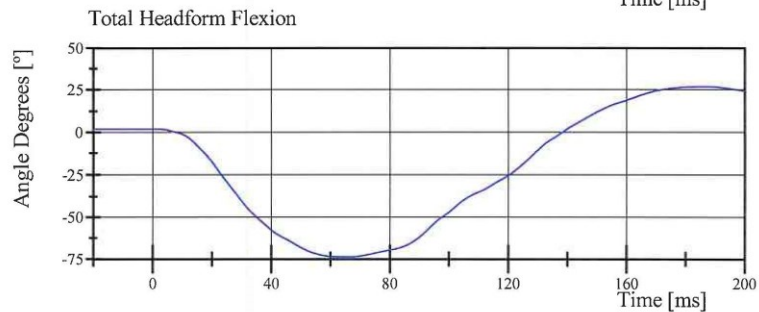
Filter Class: CFC_60
Max: 15.5 ° at 190.9 ms
Min: -58.7 ° at 77.4 ms



Filter Class: CFC_60
Max: 21.4 ° at 184.7 ms
Min: -50.1 ° at 65.9 ms



Filter Class: CFC_60
Max: 12.0 ° at 177.0 ms
Min: -17.5 ° at 55.6 ms



Filter Class: CFC_60
Max: 26.9 ° at 187.5 ms
Min: -73.7 ° at 64.1 ms

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

01.22.2016 13:40:19 633

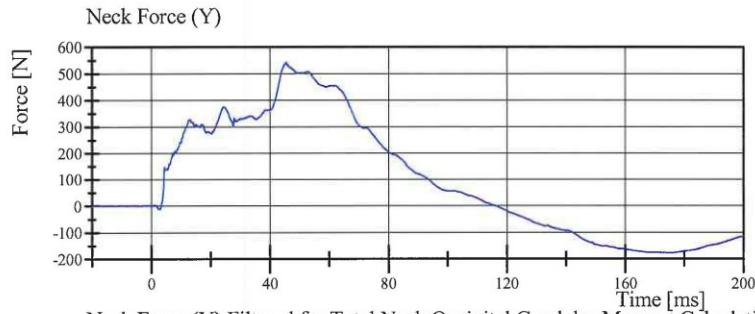


Transportation Research Center Inc.

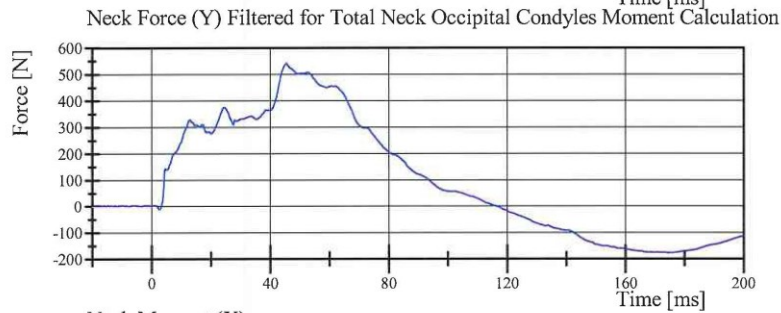
Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 20-1

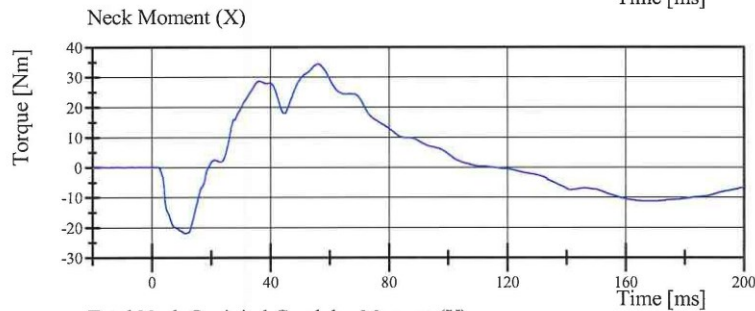
Test Date: 1/22/2016



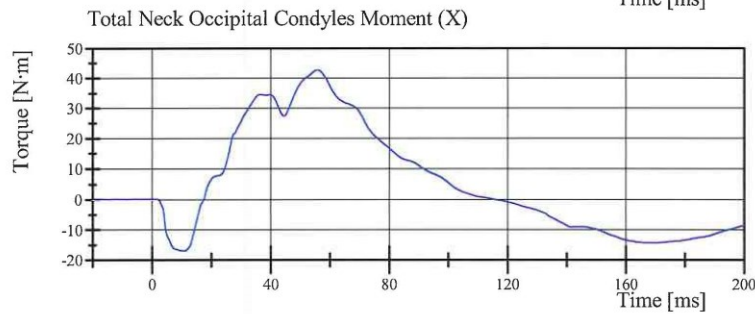
Filter Class: CFC_1000
Max: 543.7 N at 45.5 ms
Min: -177.7 N at 174.5 ms



Filter Class: CFC_600
Max: 540.9 N at 45.4 ms
Min: -177.4 N at 174.5 ms



Filter Class: CFC_600
Max: 34.4 Nm at 56.1 ms
Min: -22.1 Nm at 11.3 ms



Filter Class: Without_Constant
Max: 42.7 N·m at 55.8 ms
Min: -17.0 N·m at 11.0 ms

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

01.22.2016 13:40:20 633



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 20-1

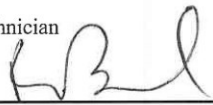
Test Date: 1/22/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.6 g	Yes
Shoulder Displacement	28 - 37 mm	32.4 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.

01.22.2016 14:12:18 878

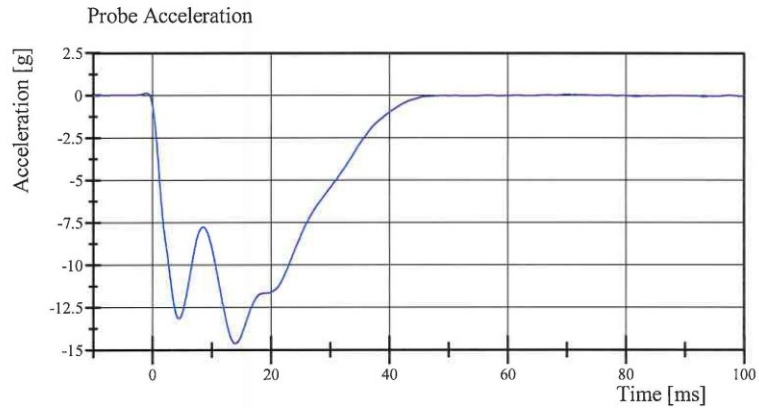


Transportation Research Center Inc.

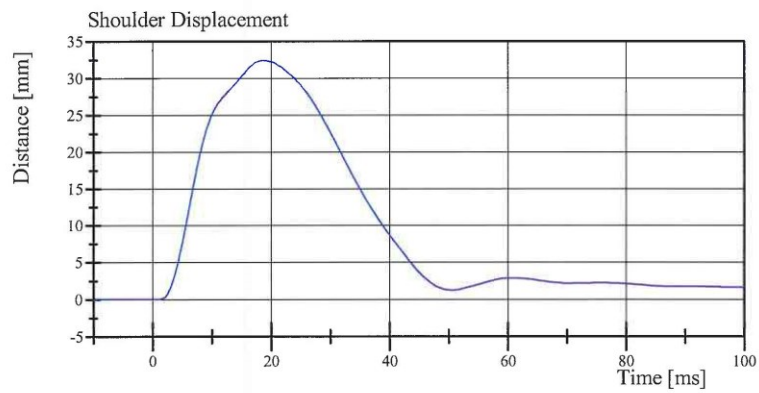
Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 20-1

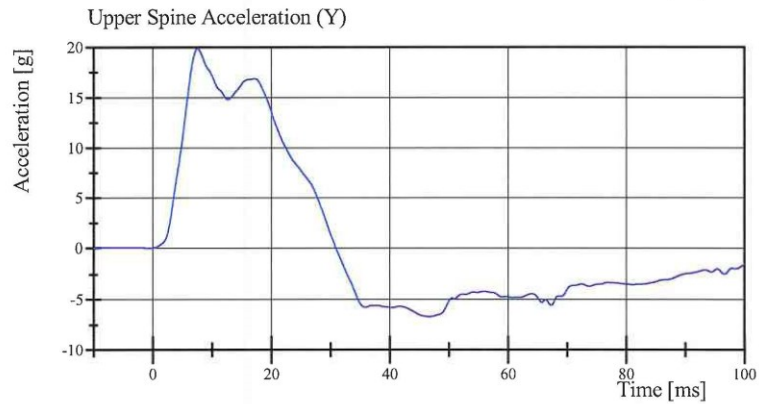
Test Date: 1/22/2016



Filter Class: CFC_180
Max: 0.1 g at -1.0 ms
Min: -14.6 g at 14.0 ms



Filter Class: CFC_600
Max: 32.4 mm at 18.6 ms
Min: -0.0 mm at -4.9 ms



Filter Class: CFC_180
Max: 19.8 g at 7.5 ms
Min: -6.7 g at 46.6 ms

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

01.22.2016 14:12:27 878



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 20-1
Test Date: 1/22/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.742 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-32.5 g	Yes
Shoulder Displacement	31 - 40 mm	36.6 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.5 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.7 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.7 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	35.5 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.6 g	Yes

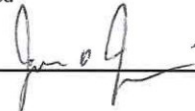
Test meets specifications.

Comments:

Technician



Approved



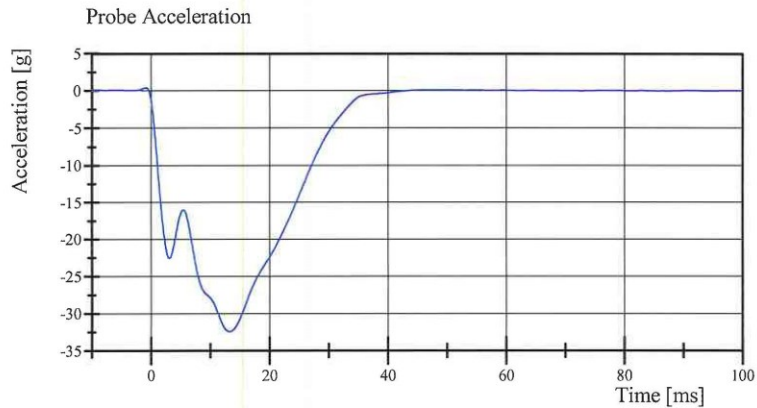
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

01.22.2016 15:08:09 647

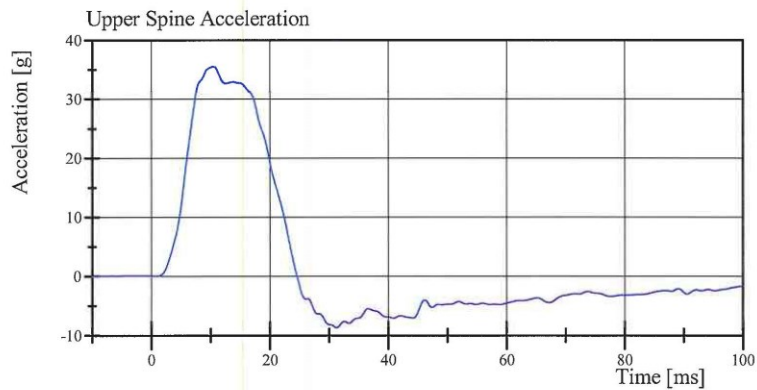


Transportation Research Center Inc.

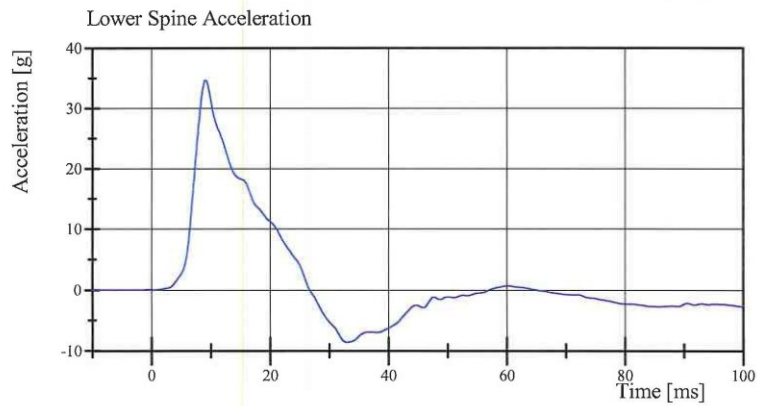
Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 20-1
Test Date: 1/22/2016



Filter Class: CFC_180
Max: 0.3 g at -0.9 ms
Min: -32.5 g at 13.2 ms



Filter Class: CFC_180
Max: 35.5 g at 10.4 ms
Min: -8.7 g at 31.2 ms



Filter Class: CFC_180
Max: 34.6 g at 9.1 ms
Min: -8.6 g at 33.0 ms

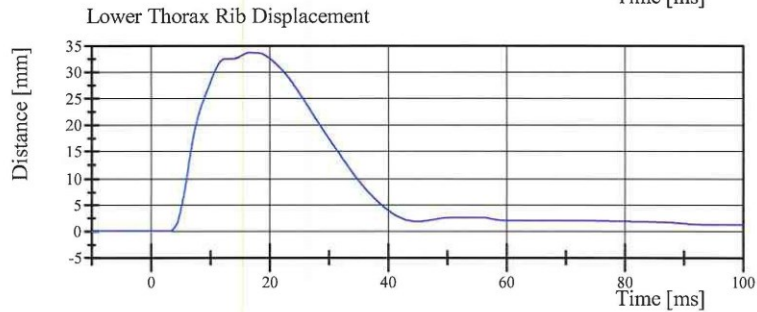
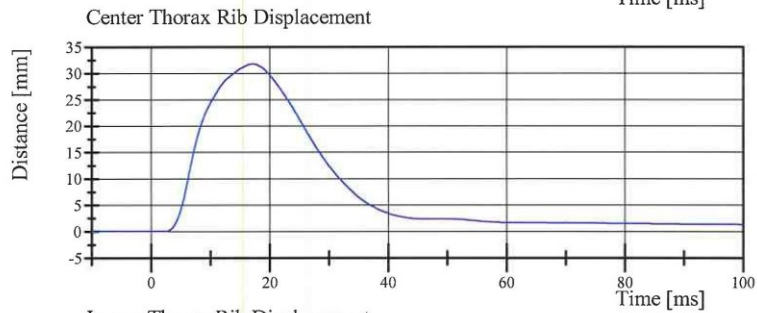
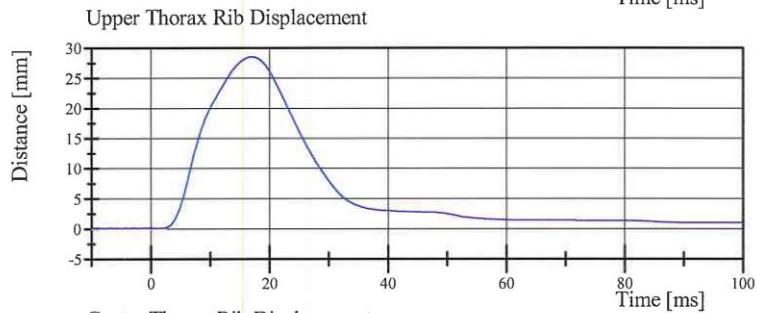
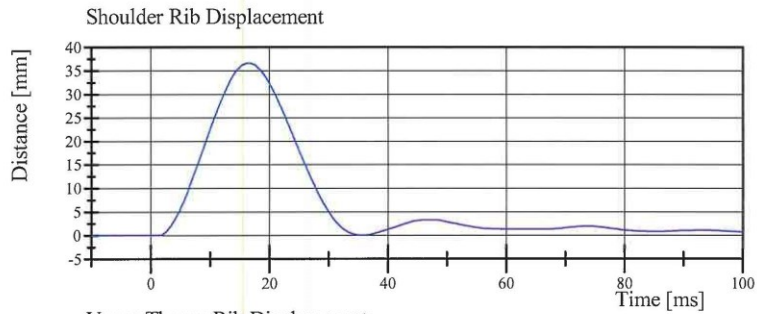
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

01.22.2016 15:08:22 647



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 20-1
Test Date: 1/22/2016



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

01.22.2016 15:08:23 647



Transportation Research Center Inc.

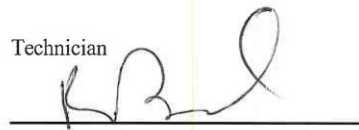
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 20-1
Test Date: 1/22/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.347 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.2 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	37.1 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	40.8 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	37.1 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	15.3 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.8 g	Yes

Test meets specifications.

Comments:

Technician



Approved



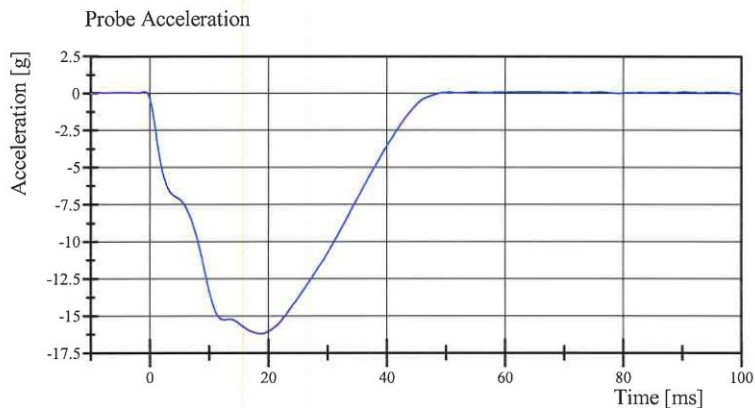
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

01.22.2016 15:37:22 855

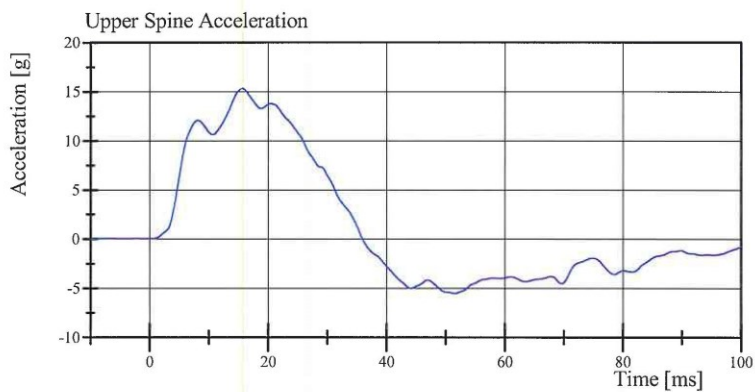


Transportation Research Center Inc.

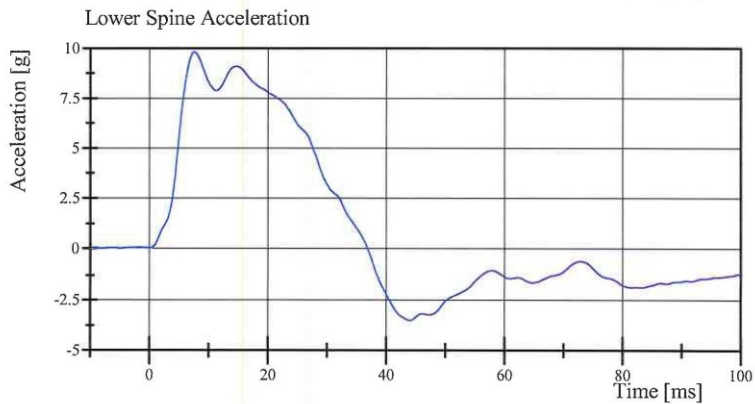
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 20-1
Test Date: 1/22/2016



Filter Class: CFC_180
Max: 0.1 g at 90.3 ms
Min: -16.2 g at 18.6 ms



Filter Class: CFC_180
Max: 15.3 g at 15.6 ms
Min: -5.5 g at 51.5 ms



Filter Class: CFC_180
Max: 9.8 g at 7.5 ms
Min: -3.5 g at 44.0 ms

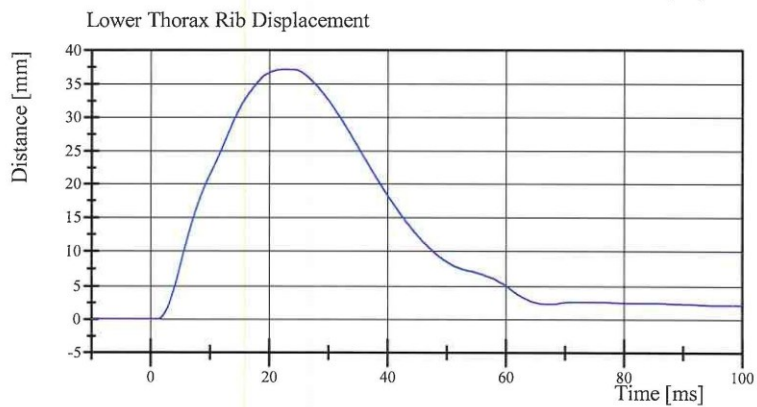
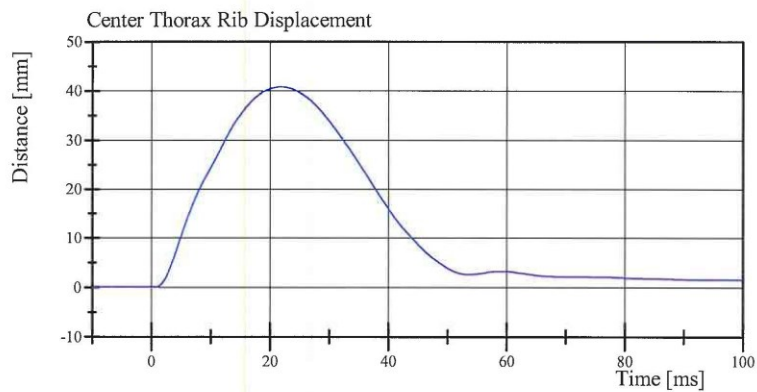
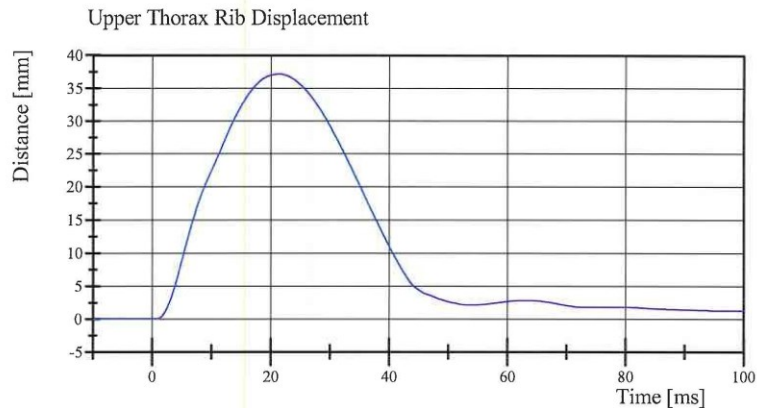
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

01.22.2016 15:37:35 855



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 20-1
Test Date: 1/22/2016



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

01.22.2016 15:37:36 855



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 20-2

Test Date: 1/22/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.3 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	40.8 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	35.6 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	11.69 g	Yes

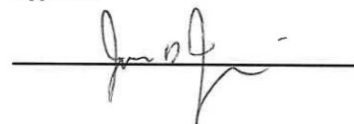
Test meets specifications.

Comments:

Technician



Approved



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

01.22.2016 14:51:49 695

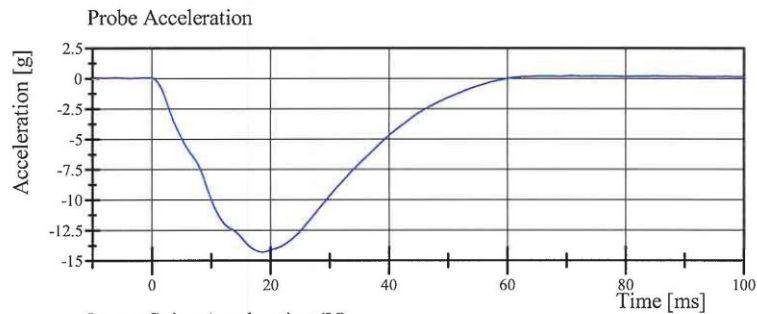


Transportation Research Center Inc.

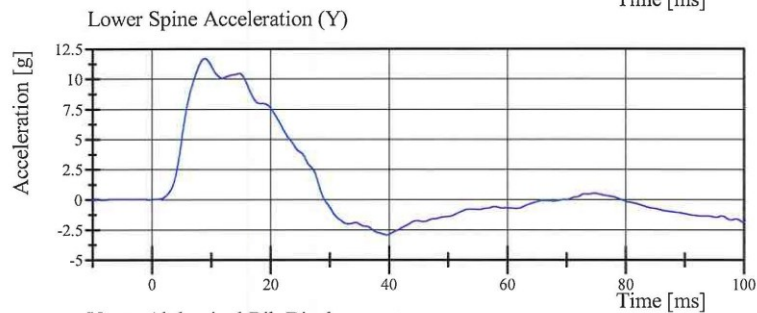
Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 20-2

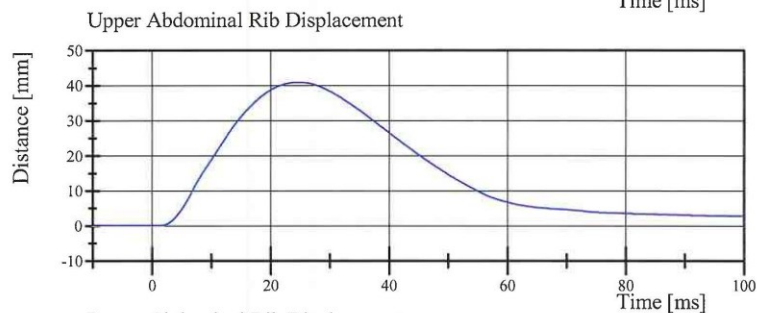
Test Date: 1/22/2016



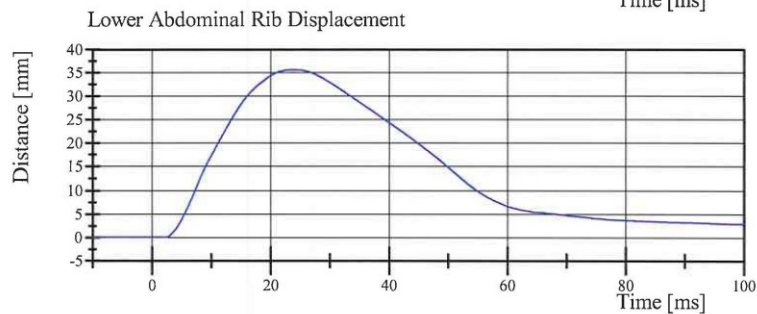
Filter Class: CFC_180
Max: 0.2 g at 70.7 ms
Min: -14.3 g at 18.5 ms



Filter Class: CFC_180
Max: 11.7 g at 8.9 ms
Min: -2.9 g at 39.5 ms



Filter Class: CFC_600
Max: 40.8 mm at 24.6 ms
Min: -0.0 mm at -3.6 ms



Filter Class: CFC_600
Max: 35.6 mm at 23.7 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.

01.22.2016 14:51:57 695



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 20-2

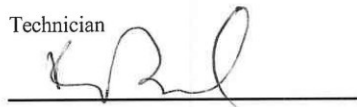
Test Date: 1/25/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	15 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.66 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-42.79 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	41.0 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,993.3 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.

01.25.2016 07:29:20 426

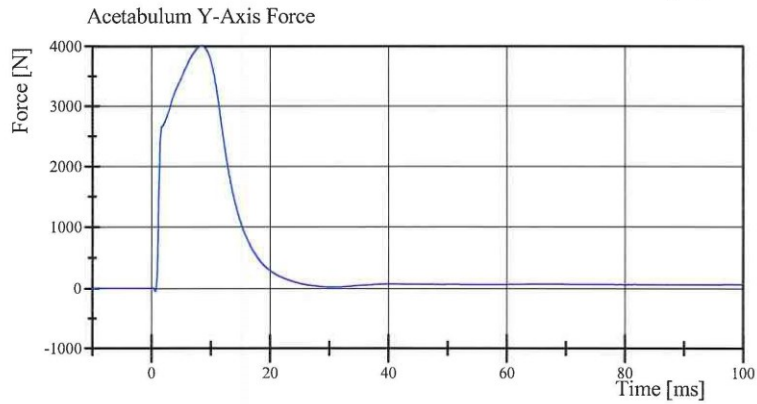
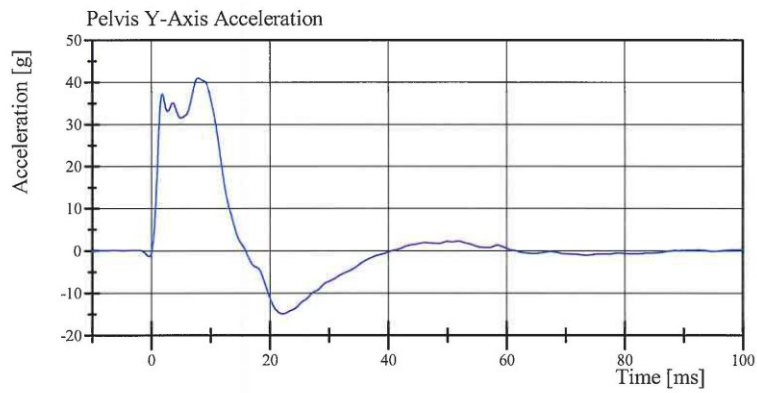
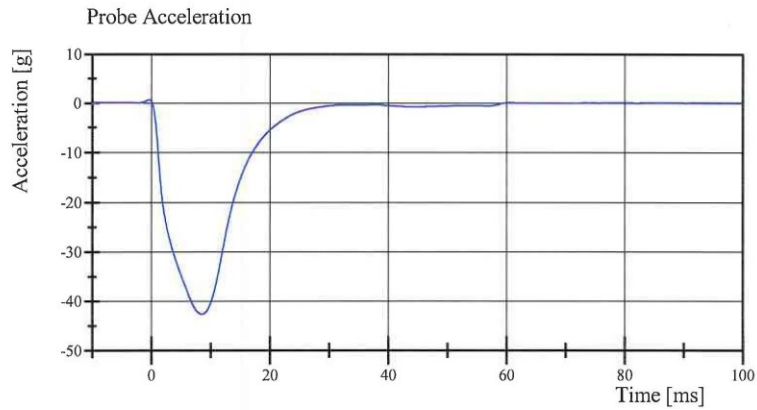


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 20-2

Test Date: 1/25/2016



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

01.25.2016 07:29:28 426



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 20-1

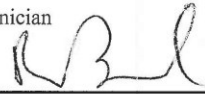
Test Date: 1/25/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.34 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-41.4 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	31.9 g	Yes
Iliac Force	4,100 - 5,100 N	4,785.4 N	Yes

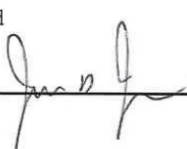
Test meets specifications.

Comments:

Technician



Approved



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

01.25.2016 10:50:48 624

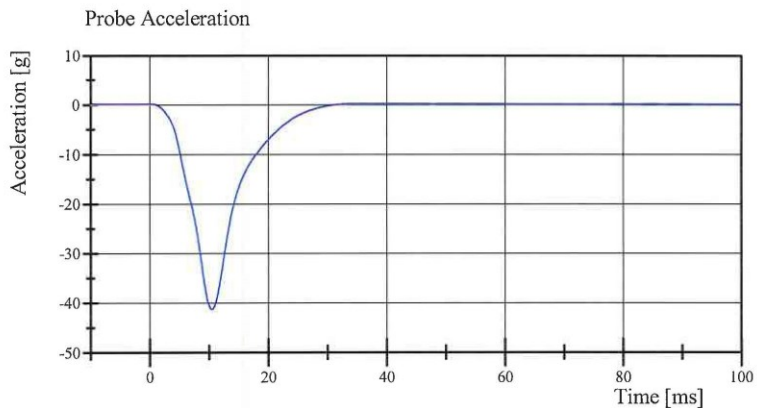


Transportation Research Center Inc.

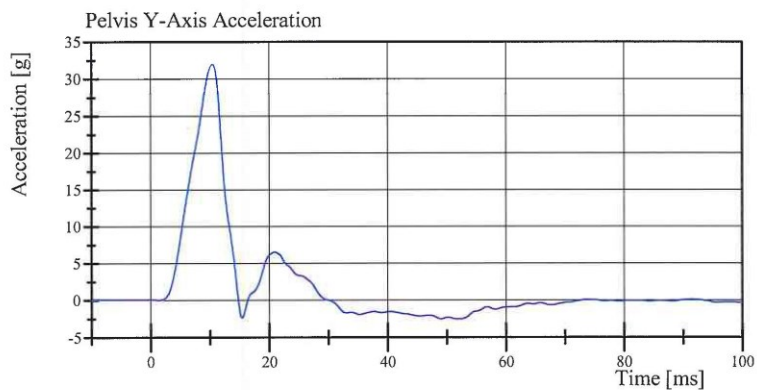
Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 20-1

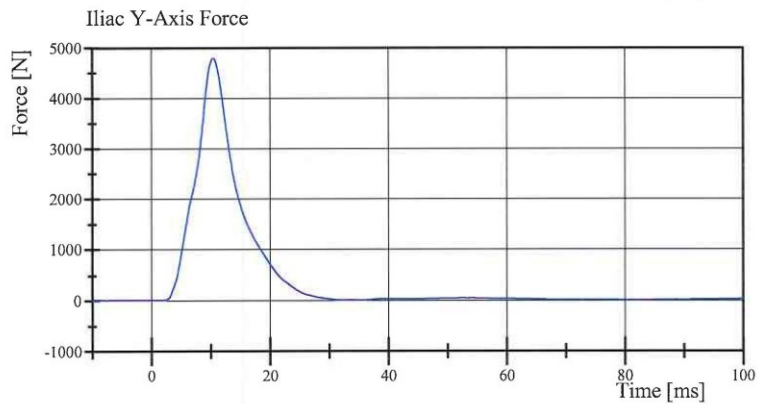
Test Date: 1/25/2016



Filter Class: CFC_180
Max: 0.1 g at 49.9 ms
Min: -41.4 g at 10.4 ms



Filter Class: CFC_180
Max: 31.9 g at 10.4 ms
Min: -2.6 g at 51.8 ms



Filter Class: CFC_600
Max: 4,785.4 N at 10.4 ms
Min: -1.3 N at -7.6 ms

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

01.25.2016 10:51:02 624



Post-Test Calibration Sheets
Driver S/N DI8818

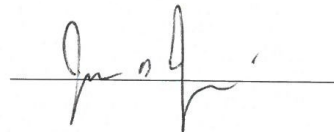
Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DI8818 Calibration No.21

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	779	Yes
B	Shoulder Pivot Height	437.0 - 453.0	439	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	201	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. 21-2

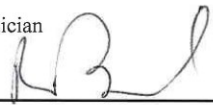
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	126.2 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

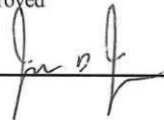
Test meets specifications.

Comments:

Technician



Approved



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

02.02.2016 11:55:25 234

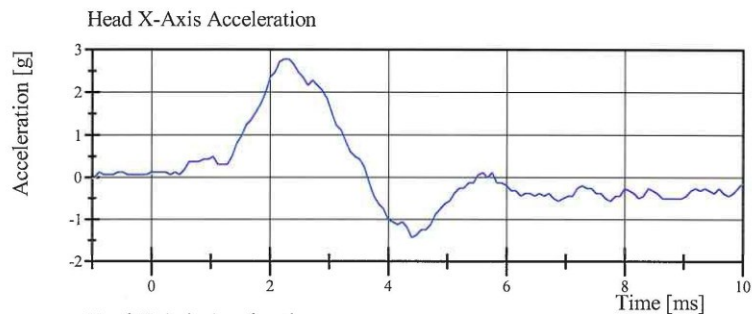


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 21-2

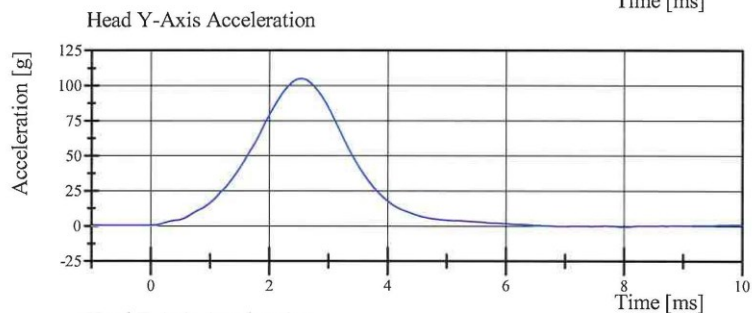
Test Date: 2/2/2016



Filter Class: CFC_1000

Max: 2.8 g at 2.2 ms

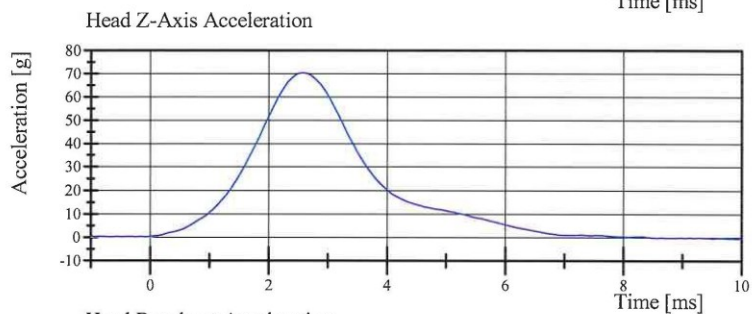
Min: -1.4 g at 4.4 ms



Filter Class: CFC_1000

Max: 104.9 g at 2.6 ms

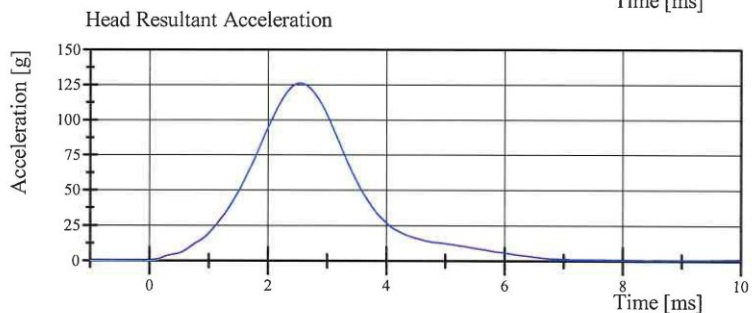
Min: -0.8 g at 8.0 ms



Filter Class: CFC_1000

Max: 70.2 g at 2.6 ms

Min: -0.5 g at 9.9 ms



Filter Class: CFC_1000

Max: 126.2 g at 2.6 ms

Min: 0.0 g at -1.0 ms

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

02.02.2016 11:55:37 234



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 21-1

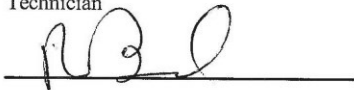
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.610 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.597 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.914 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	5.303 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.864 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.866 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-80.4 deg	Yes
Time of Peak	50 - 70 ms	63.9 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	120.1 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.

02.02.2016 09:50:05 631

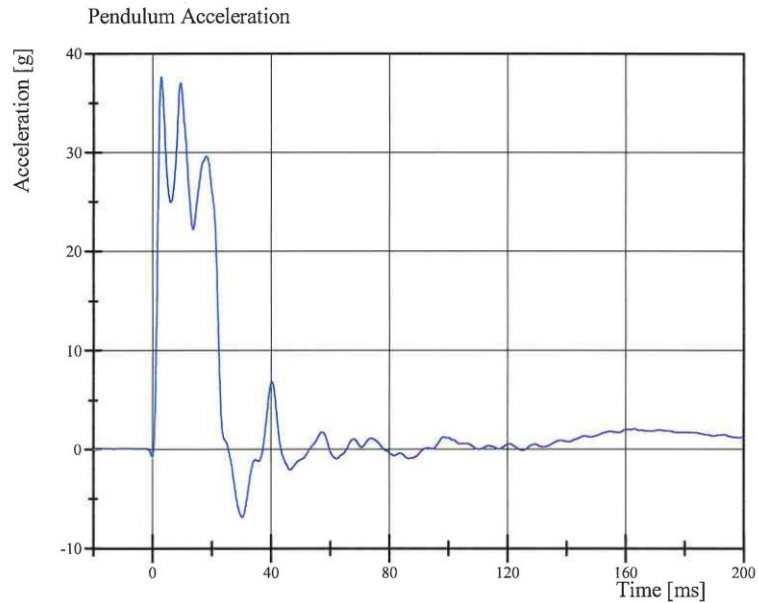


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 21-1

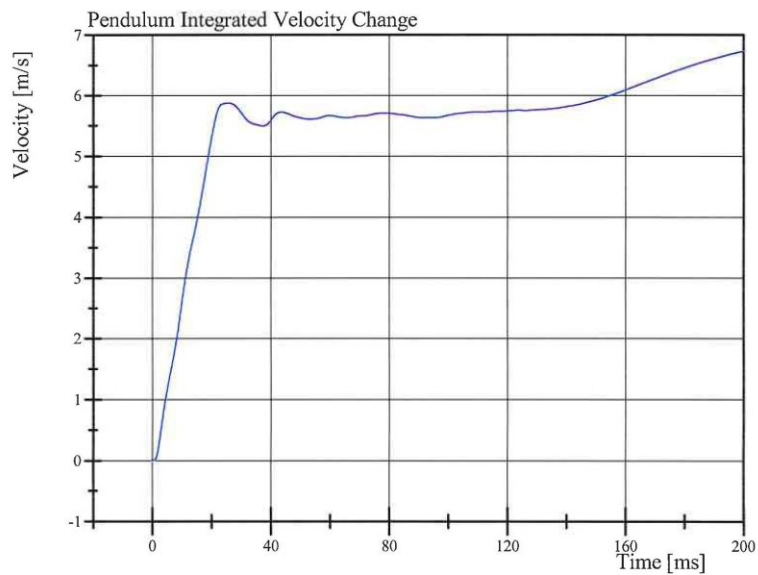
Test Date: 2/2/2016



Filter Class: CFC_180

Max: 37.5 g at 3.0 ms

Min: -6.9 g at 30.3 ms



Filter Class: CFC_180

Max: 6.7 m/s at 200.0 ms

Min: -0.0 m/s at 0.4 ms

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

02.02.2016 09:50:12 631

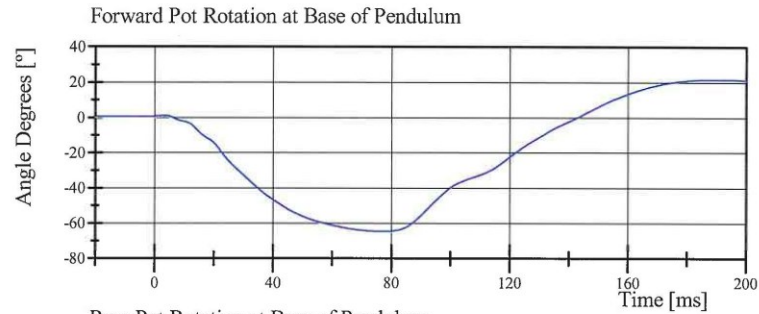


Transportation Research Center Inc.

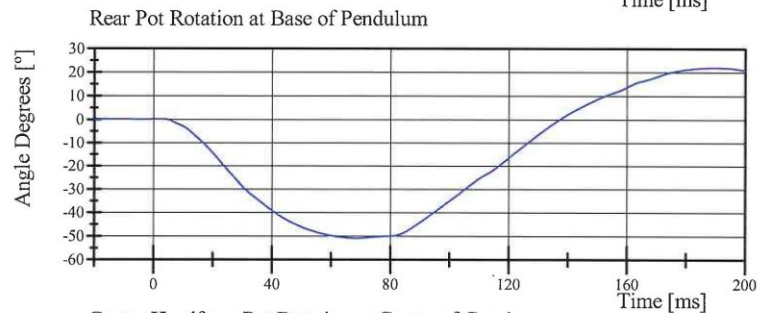
Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 21-1

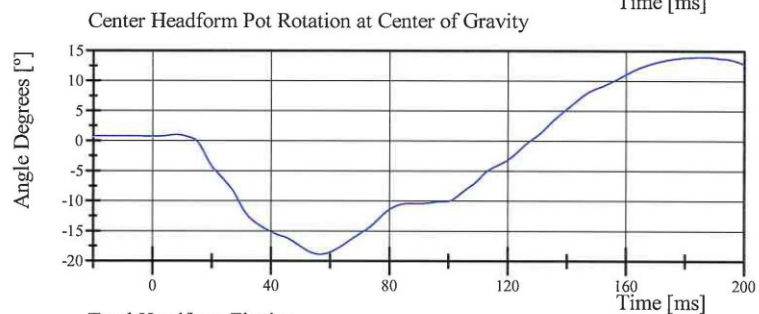
Test Date: 2/2/2016



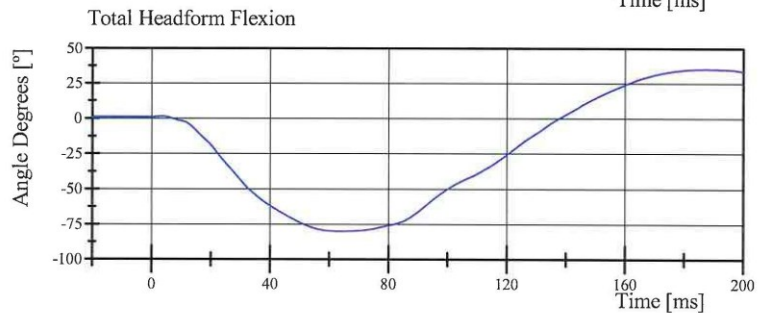
Filter Class: CFC_60
Max: 21.5 ° at 188.6 ms
Min: -64.9 ° at 77.4 ms



Filter Class: CFC_60
Max: 22.0 ° at 189.4 ms
Min: -51.0 ° at 68.6 ms



Filter Class: CFC_60
Max: 14.0 ° at 186.4 ms
Min: -18.9 ° at 56.6 ms



Filter Class: CFC_60
Max: 35.4 ° at 187.3 ms
Min: -80.4 ° at 63.9 ms

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

02.02.2016 09:50:13 631

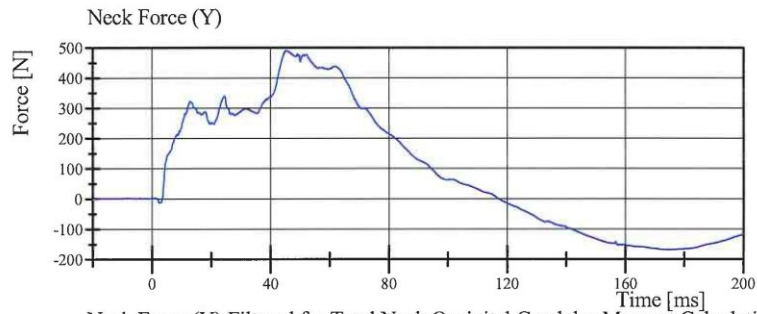


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 21-1

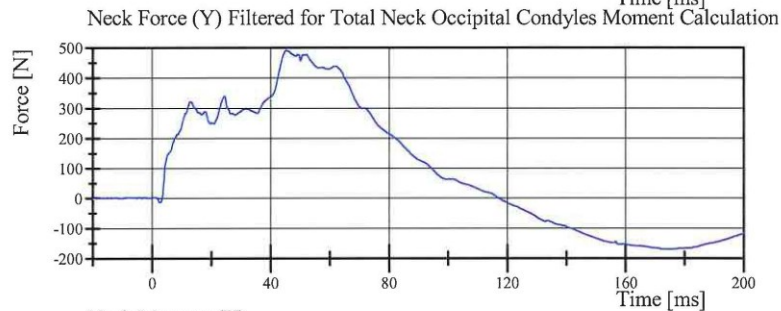
Test Date: 2/2/2016



Filter Class: CFC_1000

Max: 490.4 N at 45.2 ms

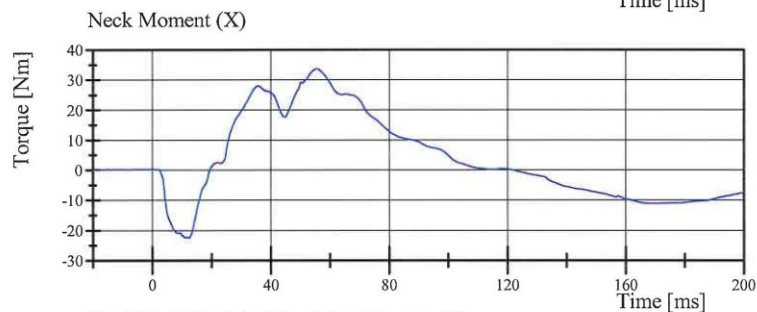
Min: -169.8 N at 174.1 ms



Filter Class: CFC_600

Max: 490.4 N at 45.4 ms

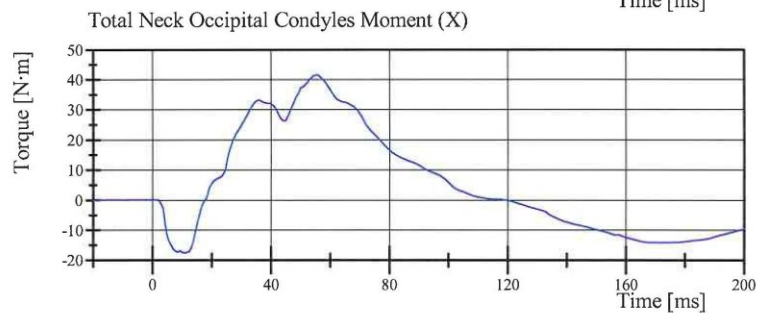
Min: -169.4 N at 175.3 ms



Filter Class: CFC_600

Max: 33.6 Nm at 55.6 ms

Min: -22.7 Nm at 12.3 ms



Filter Class: Without_Constant

Max: 41.4 N·m at 55.4 ms

Min: -17.7 N·m at 11.0 ms

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

02.02.2016 09:50:14 631



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 21-1

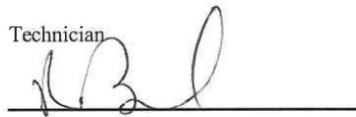
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.8 g	Yes
Shoulder Displacement	28 - 37 mm	32.6 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.6 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.

02.02.2016 10:15:31 849

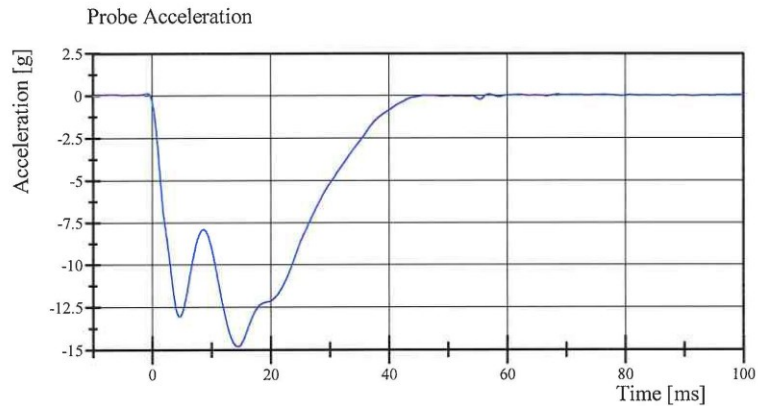


Transportation Research Center Inc.

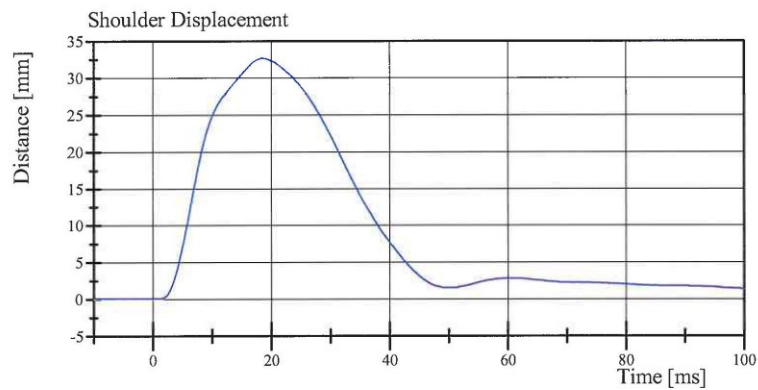
Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 21-1

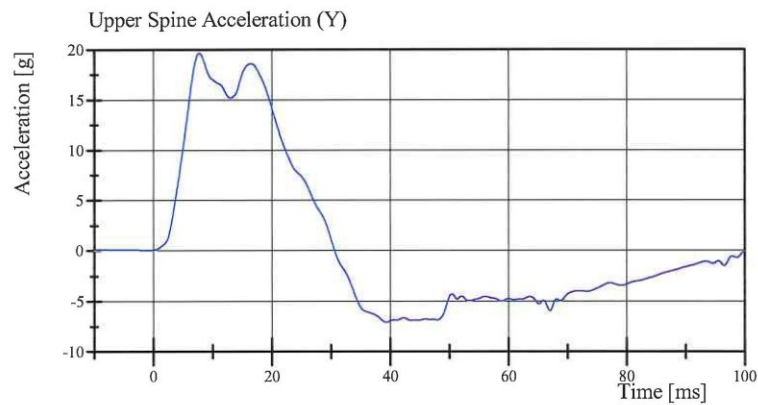
Test Date: 2/2/2016



Filter Class: CFC_180
Max: 0.1 g at -0.8 ms
Min: -14.8 g at 14.5 ms



Filter Class: CFC_600
Max: 32.6 mm at 18.6 ms
Min: -0.0 mm at 1.0 ms



Filter Class: CFC_180
Max: 19.6 g at 7.8 ms
Min: -7.1 g at 39.3 ms

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

02.02.2016 10:15:41 849



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 21-1
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.725 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.1 g	Yes
Shoulder Displacement	31 - 40 mm	37.7 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.7 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.1 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	32.3 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	34.8 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.1 g	Yes

Test meets specifications.

Comments:

Technician



Approved



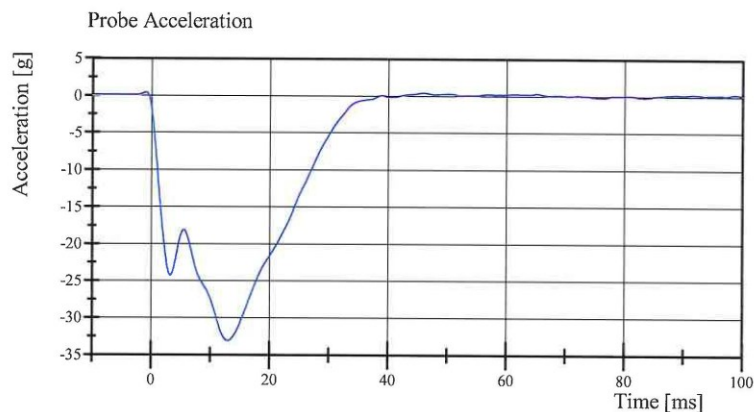
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

02.02.2016 12:47:45 621

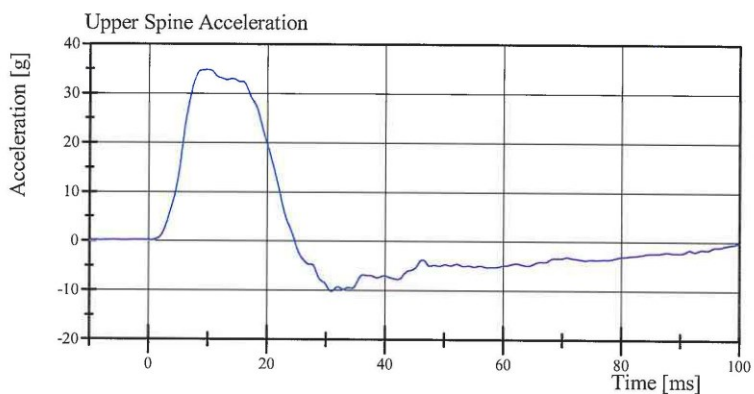


Transportation Research Center Inc.

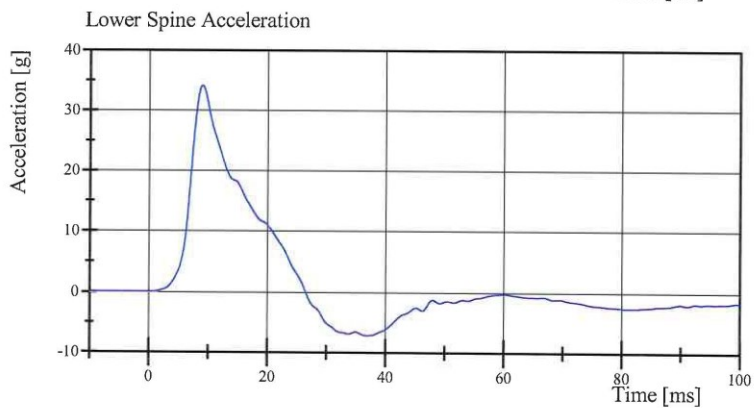
Left Lateral Thorax with Arm
SID II_s Serial No. DI8818 Certification No. 21-1
Test Date: 2/2/2016



Filter Class: CFC_180
Max: 0.4 g at 46.0 ms
Min: -33.1 g at 13.0 ms



Filter Class: CFC_180
Max: 34.8 g at 9.8 ms
Min: -10.3 g at 31.0 ms



Filter Class: CFC_180
Max: 34.1 g at 9.0 ms
Min: -7.2 g at 37.0 ms

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

02.02.2016 12:48:03 621

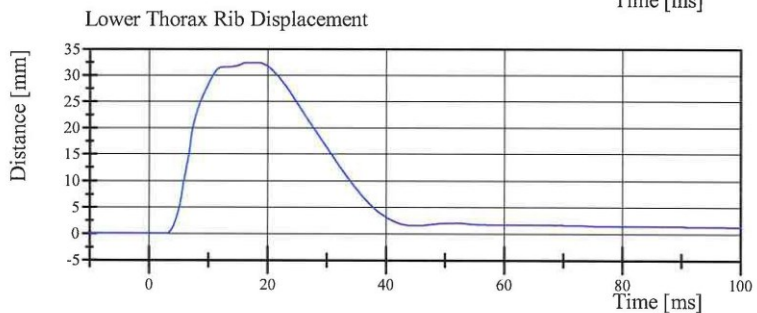
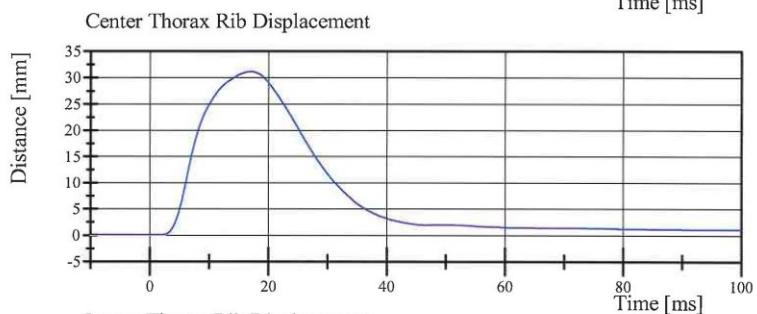
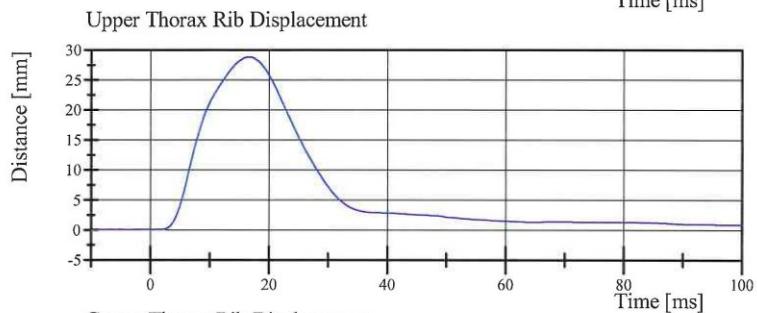
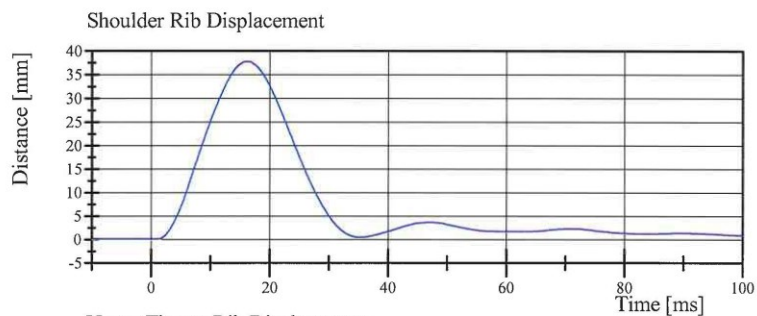


Transportation Research Center Inc.

Left Lateral Thorax with Arm

SID II_s Serial No. DI8818 Certification No. 21-1

Test Date: 2/2/2016



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

02.02.2016 12:48:03 621



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 21-1
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.350 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.8 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	39.3 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	41.4 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	36.3 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	15.0 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.6 g	Yes

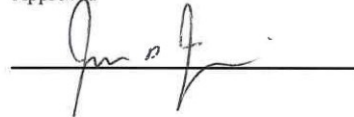
Test meets specifications.

Comments:

Technician



Approved



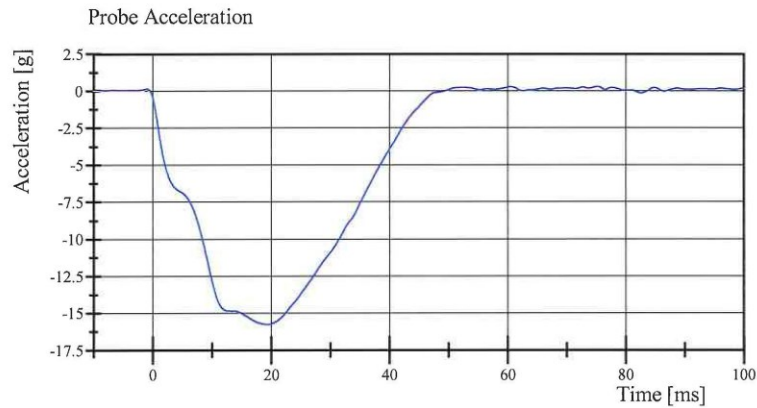
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

02.02.2016 13:25:31 839

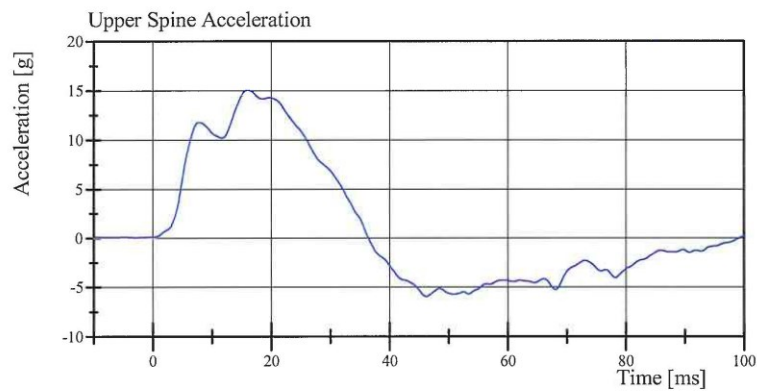


Transportation Research Center Inc.

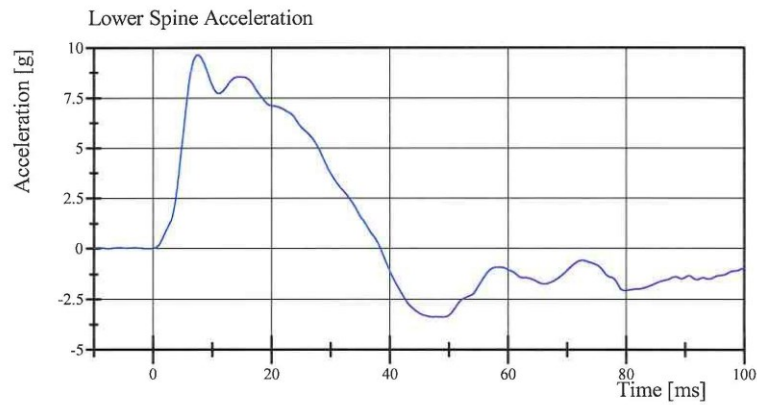
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 21-1
Test Date: 2/2/2016



Filter Class: CFC_180
Max: 0.3 g at 75.2 ms
Min: -15.8 g at 19.4 ms



Filter Class: CFC_180
Max: 15.0 g at 16.0 ms
Min: -6.0 g at 46.2 ms



Filter Class: CFC_180
Max: 9.6 g at 7.6 ms
Min: -3.4 g at 49.0 ms

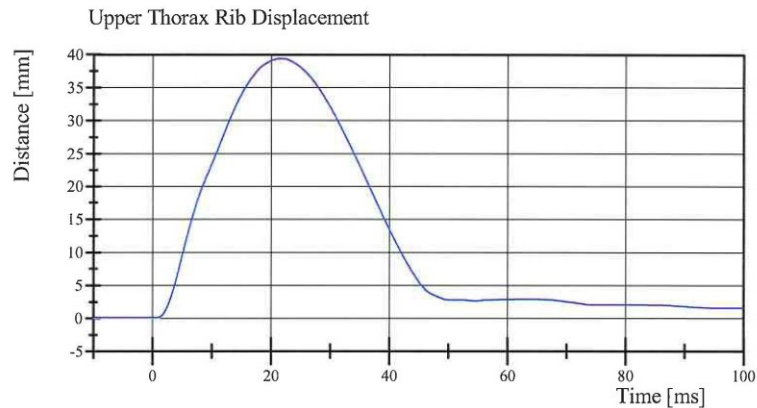
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

02.02.2016 13:25:40 839

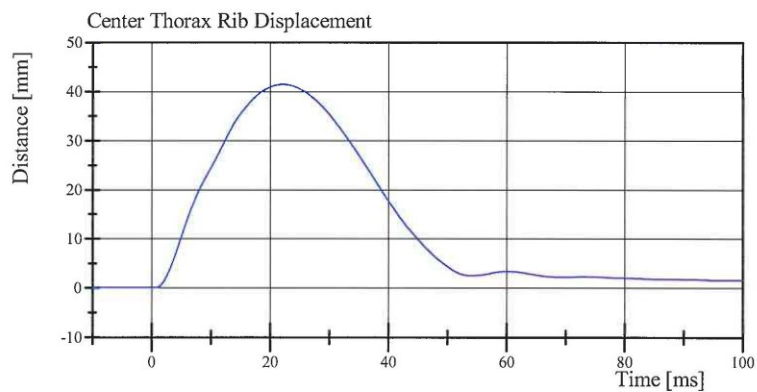


Transportation Research Center Inc.

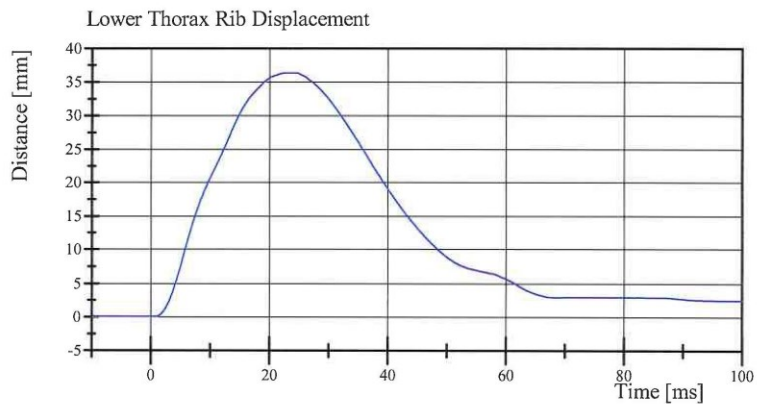
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 21-1
Test Date: 2/2/2016



Filter Class: CFC_600
Max: 39.3 mm at 21.6 ms
Min: -0.0 mm at -8.7 ms



Filter Class: CFC_600
Max: 41.4 mm at 22.2 ms
Min: -0.0 mm at -3.0 ms



Filter Class: CFC_600
Max: 36.3 mm at 24.4 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.

02.02.2016 13:25:40 839



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 21-2

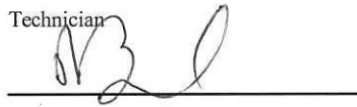
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.5 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	39.5 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	35.3 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	11.00 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.

02.02.2016 11:01:03 681

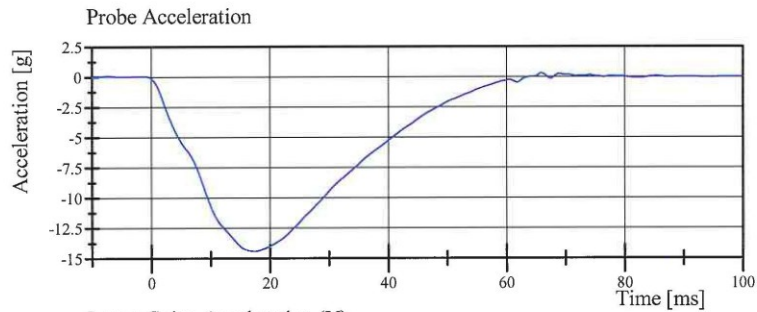


Transportation Research Center Inc.

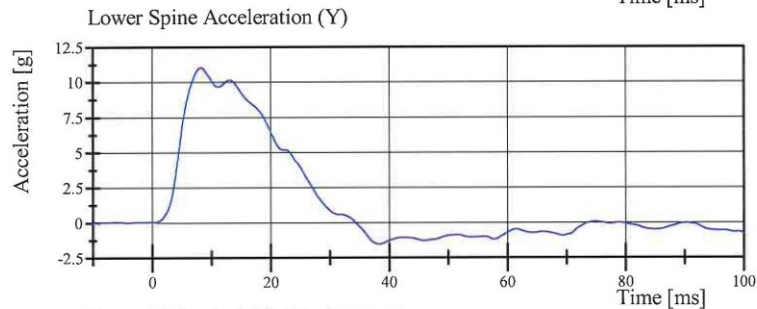
Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 21-2

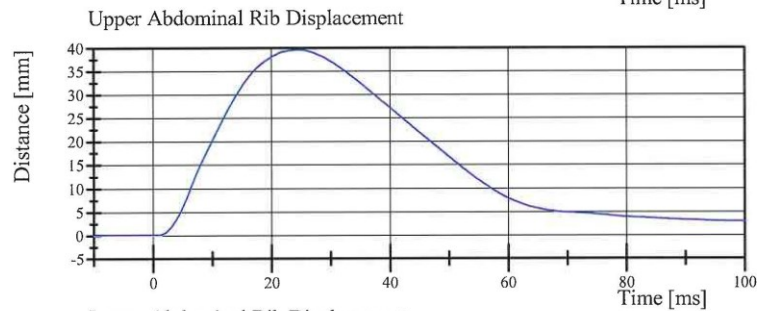
Test Date: 2/2/2016



Filter Class: CFC_180
Max: 0.3 g at 65.8 ms
Min: -14.5 g at 17.4 ms



Filter Class: CFC_180
Max: 11.0 g at 8.2 ms
Min: -1.5 g at 38.3 ms



Filter Class: CFC_600
Max: 39.5 mm at 24.2 ms
Min: -0.0 mm at -4.7 ms



Filter Class: CFC_600
Max: 35.3 mm at 23.8 ms
Min: -0.0 mm at 1.3 ms

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

02.02.2016 11:01:13 681



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 21-11

Test Date: 2/4/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.70 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-47.47 g	No
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	42.5 g	No
Acetabulum Force	3,600 - 4,300 N	4,226.1 N	Yes

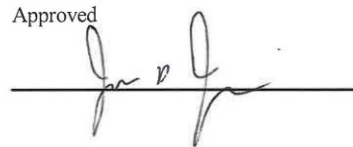
Test does not meet specifications.

Comments:

Technician



Approved



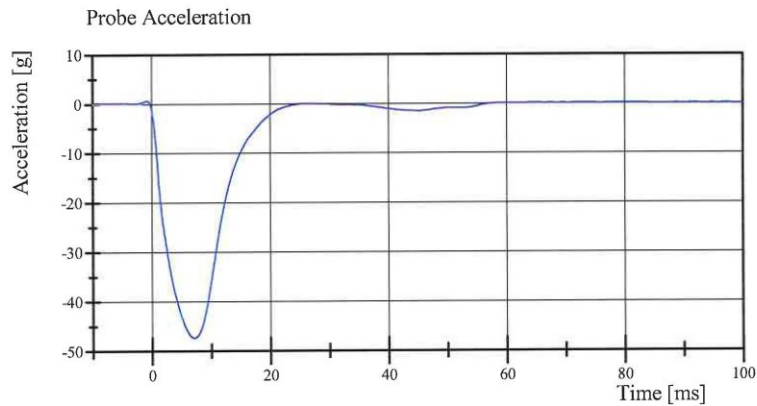
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

02.04.2016 21:20:49 454

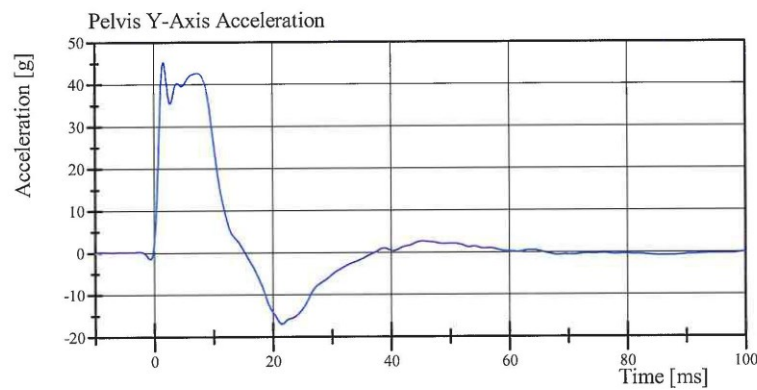


Transportation Research Center Inc.

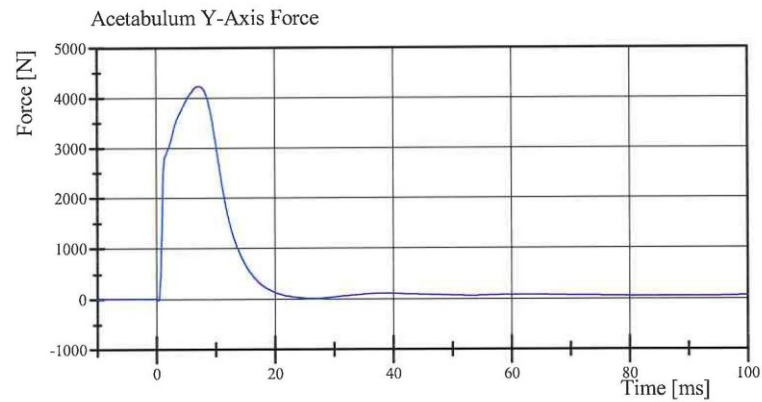
Left Lateral Pelvis
SID IIs Serial No. DI8818 Certification No. 21-11
Test Date: 2/4/2016



Filter Class: CFC_180
Max: 0.5 g at -0.8 ms
Min: -47.5 g at 7.1 ms



Filter Class: CFC_180
Max: 45.3 g at 1.6 ms
Min: -17.1 g at 21.5 ms



Filter Class: CFC_600
Max: 4,226.1 N at 7.2 ms
Min: -29.0 N at 0.3 ms

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

02.04.2016 21:21:16 454



Transportation Research Center Inc.

Left Lateral Iliac
SID IIs Serial No. DI8818 Certification No. 21-1
Test Date: 2/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.34 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-41.8 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	30.8 g	Yes
Iliac Force	4,100 - 5,100 N	4,643.0 N	Yes

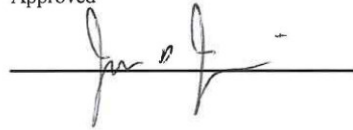
Test meets specifications.

Comments:

Technician



Approved



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

02.02.2016 10:03:10 660

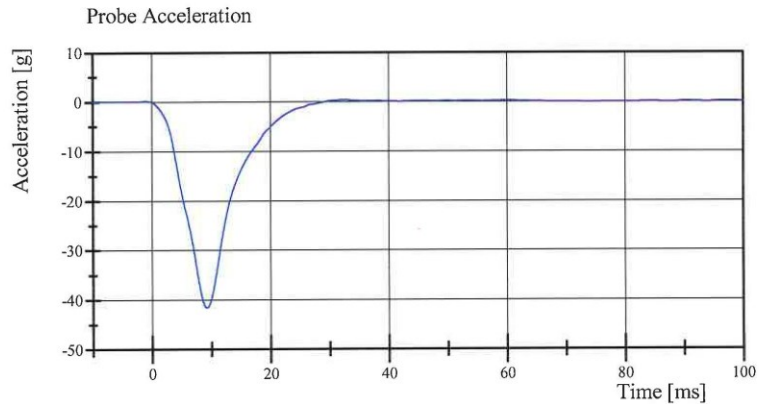


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 21-1

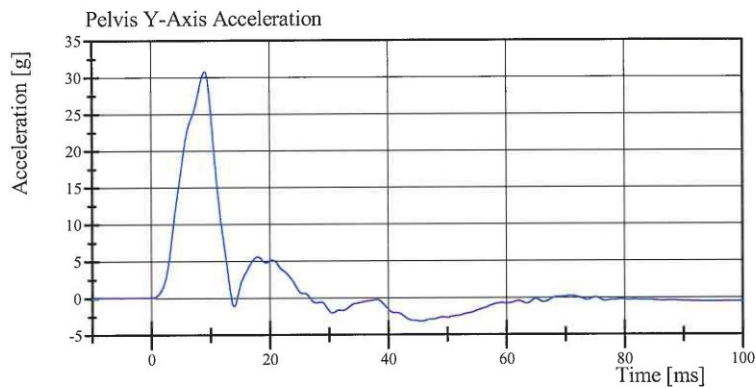
Test Date: 2/2/2016



Filter Class: CFC_180

Max: 0.3 g at 32.6 ms

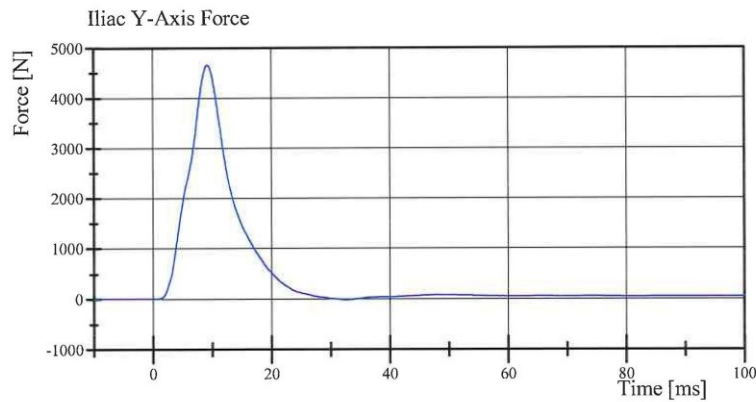
Min: -41.8 g at 9.3 ms



Filter Class: CFC_180

Max: 30.8 g at 9.1 ms

Min: -3.2 g at 45.7 ms



Filter Class: CFC_600

Max: 4,643.0 N at 9.3 ms

Min: -15.8 N at 32.6 ms

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

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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)					71013	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	P88468	Endevco	14-Jan-2016
Vehicle Center of Gravity	Y	P81599	Endevco	14-Jan-2016
Vehicle Center of Gravity	Z	P33817	Endevco	14-Jan-2016
Left Floor Sill	Y	P29868	Endevco	2-Sep-2015
A-Pillar Sill	Y	P27211	Endevco	2-Sep-2015
A-Pillar Low	Y	P63151	Endevco	14-Jan-2016
A-Pillar Mid	Y	P73236	Endevco	14-Jan-2016
B-Pillar Sill	Y	P57184	Endevco	3-Sep-2015
B-Pillar Low	Y	P81542	Endevco	7-Dec-2015
B-Pillar Mid	Y	P34103	Endevco	7-Dec-2015
Driver Seat	Y	P25067	Endevco	14-Jan-2016
Engine Top	X	P88548	Endevco	7-Aug-2015
Engine Top	Y	P34087	Endevco	2-Nov-2015
Firewall	Y	P87834	Endevco	9-Oct-2015
Right Roof	Y	P76405	Endevco	17-Dec-2015
Right Floor Sill	Y	P80497	Endevco	2-Sep-2015
Rear Floor Pan	X	P46078	Endevco	6-Jan-2016
Rear Floor Pan	Y	P87840	Endevco	2-Sep-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