

**REPORT NUMBER: SPNCAP-KAR-19-021  
NEW CAR ASSESSMENT PROGRAM (NCAP)  
SIDE IMPACT POLE TEST**

**NISSAN MOTOR CO., LTD.  
2019 NISSAN KICKS S 5-DOOR SUV**

**NHTSA No: M20195207**

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



**MARCH 30, 2019**

**FINAL REPORT**

**PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
OFFICE OF CRASHWORTHINESS STANDARDS  
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Approval Date: \_\_\_\_\_ March 30, 2019 \_\_\_\_\_

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: \_\_\_\_\_

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

Date: \_\_\_\_\_

## TECHNICAL REPORT DOCUMENTATION PAGE

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		<b>14. Sponsoring Agency Code</b> NRM-110																												
<b>15. Supplementary Notes</b>																														
<b>16. Abstract</b> <p>A 32.20 km/h 75° rigid pole side NCAP impact test was conducted on the subject 2019 Nissan Kicks S 5-door SUV 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 crash protection. The test was conducted at the Applus IDIADA KARCO Engineering, LLC. facility in Adelanto, California on March 13, 2019.</p> <p>The impact velocity was 32.47 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 16.7°C. The target vehicle's maximum post-test static crush was 336 mm located at level 3. The test vehicle's occupant performance data is as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th rowspan="2" style="text-align: left;">Measurement Description</th> <th colspan="3" style="text-align: center;">Driver ATD (SID-IIs)</th> </tr> <tr> <th style="text-align: center;">Units</th> <th style="text-align: center;">Threshold</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>)</td> <td style="text-align: center;">g</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">205.7</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td style="text-align: center;">g</td> <td style="text-align: center;">82</td> <td style="text-align: center;">31</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">5525</td> <td style="text-align: center;">2512</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">38</td> <td style="text-align: center;">24</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">45</td> <td style="text-align: center;">17</td> </tr> </tbody> </table> <p>The struck side doors of the vehicle were jammed shut and did not separate from the body at the hinges or latches. The remaining doors did not open during the side impact event.</p>				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC <sub>36</sub> )	g	1000	205.7	Resultant Lower Spine Acceleration	g	82	31	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2512	Maximum Thoracic Rib Deflection	mm	38	24	Maximum Abdominal Rib Deflection	mm	45	17
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<b>17. Key Words</b> New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		<b>18. Distribution Statement</b> Copies of this report are available from: National Highway Traffic Safety Admin. Technical Information Services Division, NPO-411 1200 New Jersey Ave., SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																												
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**SECTION 1**  
**TEST PURPOSE AND PROCEDURE**

This side impact test is part of the MY 2019 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-14-D-00355L. The purpose of this test is to generate comparative side impact performance in a 2019 Nissan Kicks S 5-door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure date October 2015.

## **SECTION 2**

### **SUMMARY OF TEST RESULTS**

A rigid pole side impact test was conducted on a 2019 Nissan Kicks S 5-door SUV. The subject vehicle was towed into the rigid pole at an angle of 75.8° and a velocity of 32.47 km/h. The test was conducted by Applus IDIADA KARCO Engineering, LLC. in Adelanto, California on March 13, 2019. Pre- and post-test photographs of the test vehicle and 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) was instrumented accordingly:

- Primary and Redundant Head CG tri-axial accelerometers
- Thorax upper, middle and lower rib displacement potentiometers
- Abdomen upper and lower rib displacement potentiometers
- Lower spine (12) tri-axial 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. Appendix D contains the test equipment and instrumentation calibration data.

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

Measurement Description	Units	Driver ATD (SID-IIs)	
		IARV	Result
Head Injury Criteria (HIC <sub>36</sub> )		1000	205.7
Lower Spine (T12) Resultant Acceleration	g	82	31
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2512
Maximum Thoracic Rib Deflection	mm	38*	24
Maximum Abdominal Rib Deflection	mm	45*	17

\*Proposed IARV

Supplemental restraint information is given below:

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

### GENERAL COMMENTS

The struck side doors of the vehicle were jammed shut. There was no separation at the hinges or latches. The remaining doors remained closed and latched. There were no ATD values that exceeded limits. The Left B-Post At Sill Y, Left Lower B-Post Y, and Left Mid B-Post Y channels were not installed on the test vehicle. Load Cell Pole #3 FY had questionable data.

### SECTION 3

#### OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

#### CONVERSION FACTORS

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



**DATA SHEET NO. 1**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA Number	M20195207
Model Year	2019
Make	Nissan
Model	Kicks S
Body Style	5-Door SUV
VIN	3N1CP5CU0KL481686
Body Color	Brilliant Silver
Odometer Reading (km / mi)	63 / 39
Engine Displacement (L)	1.6
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	CVT
Overdrive	No
Final Drive	FWD
Roof Rack	Yes
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

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

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

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Nissan Motor Co., LTD.
Date of Manufacture	11/18
Vehicle Type	Passenger Car

GVWR (kg)	1633
GAWR Front (kg)	863
GAWR Rear (kg)	770

**VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION**

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				385.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				44.8

A  
B  
A-B

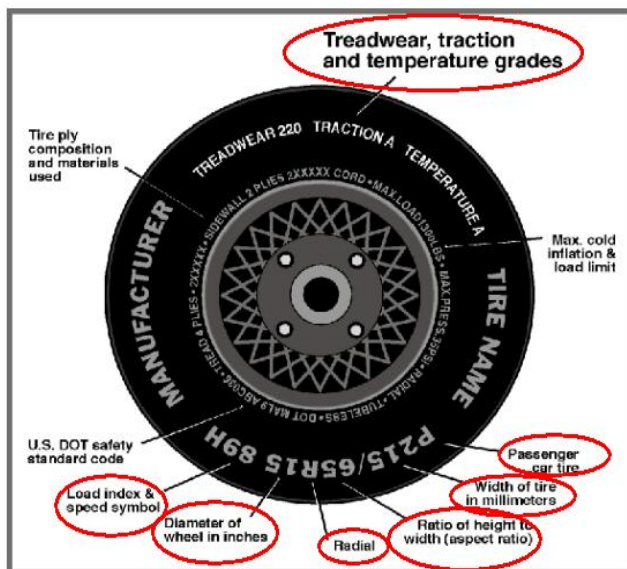
**VEHICLE SEAT TYPE**

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

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

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	P205/60R16	P205/60R16
Tire Size on Vehicle	P205/60R16	P205/60R16
Tire Manufacturer	Firestone	Firestone
Tire Model	FT140	FT140
Treadware	560	560
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	92H	92H
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	V6XW FT0 3318	V6XW FT0 3318
DOT Safety Code Right	V6XW FT0 3318	V6XW FT0 3318

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

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**TIRE PRESSURES**

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

**TEST VEHICLE AXLE WEIGHTS**

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	371.0	239.0		390.5	276.0		384.0	281.0	
Right	kg	353.5	226.0		363.0	246.0		358.0	260.0	
Ratio	%	60.9%	39.1%	100.0%	59.1%	40.9%	100.0%	57.8%	42.2%	100.0%
Total	kg	724.5	465.0	1189.5	753.5	522.0	1275.5	742.0	541.0	1283.0

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1189.5	A
Actual Weight of 1 P572V ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1283.3	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e.

Calculated Test Vehicle Target Weight -4.5 kg to -9.0 kg)?  Yes  No

**TEST VEHICLE ATTITUDE AND CG**

Measurement Description	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	°	-0.3	-0.1	0.0	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.2	-0.1	0.0	Yes
Front Bumper-Line Angle (left-to-right)**	°	0.0	-0.1	-0.1	Yes
Rear Bumper-Line Angle (left-to-right)**	°	0.1	0.0	-0.1	Yes
Vehicle CG (Aft of Front Axle)	mm	1026	1074	1106	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	20	34	28	

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

\*\*\*The "As Tested" vehicle attitude angle measurements must be within "As Delivered" and the "Fully Loaded" vehicle attitude measurements at each location. Indicate "Yes" or "No" for "Meets Requirement"

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

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

Component Description	Weight (kg)
Trunk Trim, Spare Tire, and Tools	15.5
Ballast / Equipment Added	52.5

Test Height Adjustable Setting (If Applicable)	
--	--

**DATA SHEET NO. 2**

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

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**SEAT POSITIONING**

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

**SCRL ANGLE RANGE**

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	3.2	0.0	1.6
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

**SEAT HEIGHT AND ANGLE**

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	1.6	257	Max			
			Mid	238	248	257
			Min			
Front Passenger Seat	Fixed	619	Max			
			Mid	602	612	619
			Min			
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

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

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

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

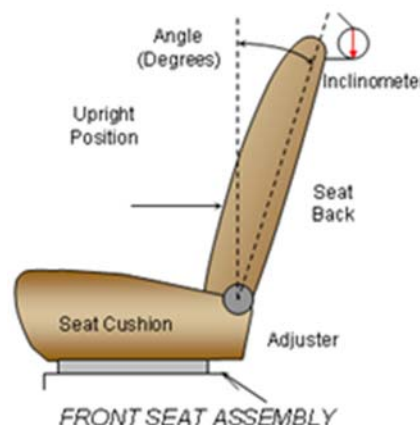
**SEAT FORE/AFT POSITION**

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	25	120	12
Front Passenger Seat	240	25	120	12
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

\*Detent zero (0) is the forward most detent

**SEAT BACK ADJUSTMENT**

The driver's seat back is positioned such that the dummy's head is level. The front passenger's seat back is positioned in a similar manner to the driver's seat. The struck side rear passenger seat back is positioned in accordance with the information provided by the manufacturer in Form 1 for the 5<sup>th</sup> 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 back angle is measured using the outboard head restraint post.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	61.6	20	4.2	0
Front Passenger Seat	60.7	20	4.2	0
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

\*Detent zero (0) is the forward most detent

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

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

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**SEAT BELT ANCHORAGE ADJUSTMENT**

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. The positions are marked H, M2, M1, L from top to bottom.

	Total No. of Positions	Placed in Position
Driver Seat	4	H

**HEAD RESTRAINT ADJUSTMENT**

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

	Total No. of Positions	Placed in Position
Driver Seat	4	Lowest

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

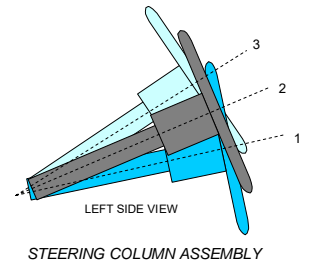
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**STEERING COLUMN ADJUSTMENT**

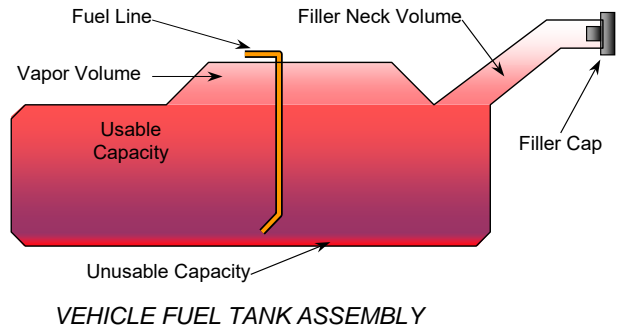
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	23.4	86
Geometric Center - Position 2	25.9	106
Uppermost - Position 3	28.4	126
Telescoping Steering Wheel Travel		40
Test Position	25.9	106



**FUEL PUMP**

The vehicle is equipped with an electronic fuel pump. The fuel pump starts when the ignition is on and will operate while the engine is running.



**FUEL TANK CAPACITY**

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	40.88
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	40.88
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	38.02
Actual amount of Solvent Used in Test	38.00
1/3 of Usable Capacity	13.63

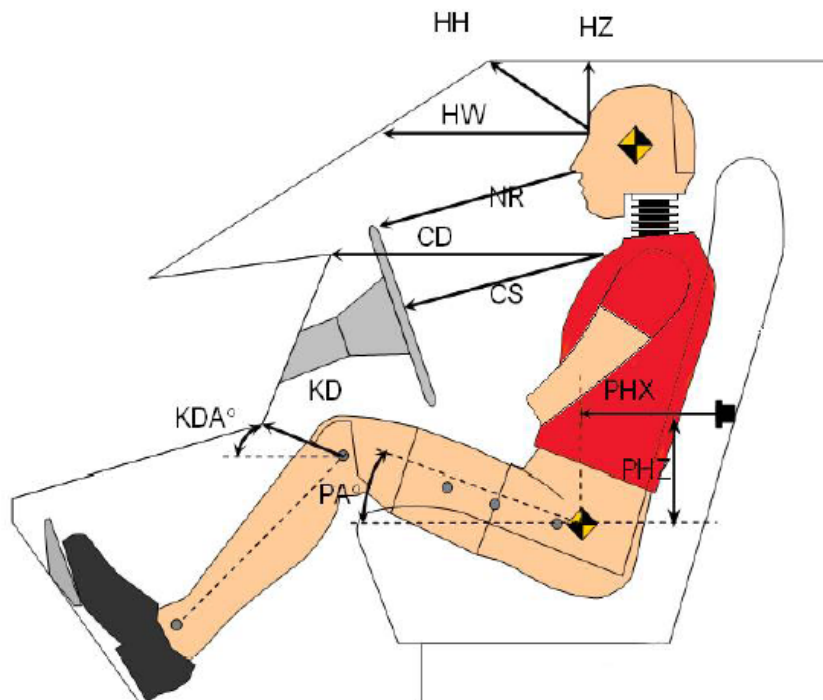
Is the Actual Amount of Solvent Used in the test equal to 93% ± 1% of the Usable Capacity stated in the Form No. 1?  **Yes**  **No**



### DATA SHEET NO. 3

#### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

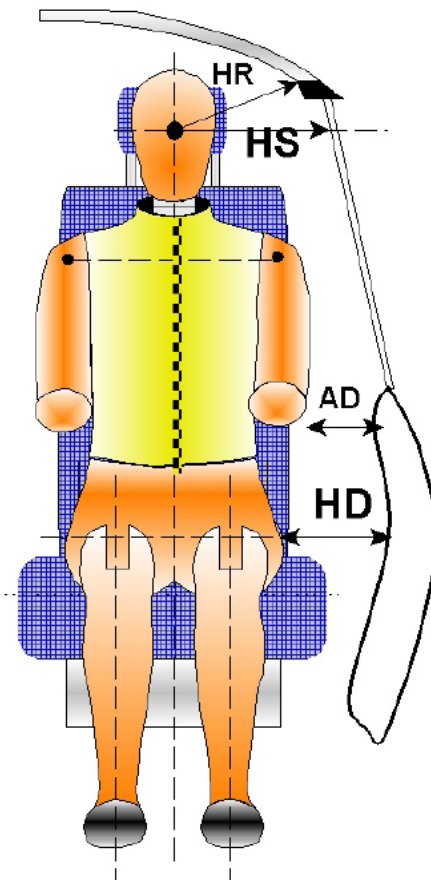


Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	270	
HW	Head to Windshield	622	
HZ	Head to Roof	215	
NR	Nose to Rim	263	
CD	Chest to Dash	411	
CS	Chest to Steering Wheel	181	
KD(L)/KDA(L)°	Left Knee to Dash	106	40.1
KD(R)/KDA(R)°	Right Knee to Dash	101	37.9
PAX°	Pelvic Tilt Angle (x-axis)		19.0
PAY°	Pelvic Tilt Angle (y-axis)		0.2
PHX	Hip Point to Striker (x-axis)	314	
PHZ	Hip Point to Striker (z-axis)	63	

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

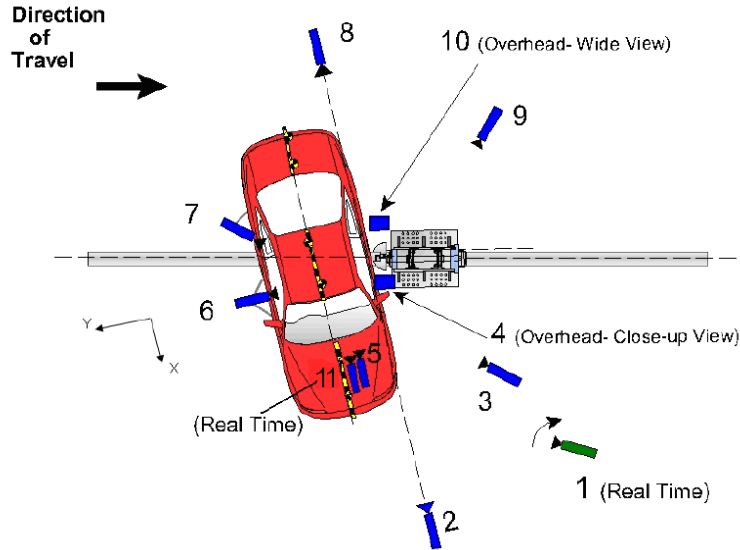


Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	261
HS	Head to Side Window	mm	405
AD	Arm to Door	mm	131
HD	Hip Point to Door	mm	149

**DATA SHEET NO. 5**

**CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



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 (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	24	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	8.5	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	12.5	1000
5	On-Board - Dummy Front View	0.96	0.54	-1.40	8.5	1000
6	On-Board - Dummy Side View	0.99	0.49	-1.34	8.5	1000
7	On-Board - Dummy Rear Oblique View	-0.02	1.58	-1.16	8.5	1000
8	Rear Ground Level - Impact View	-6.12	-6.23	-0.96	24	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	35	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	14	1000
11	Real Time Dummy Front View	-0.87	1.57	-1.21		30

\*All measurements accurate to ±6 mm

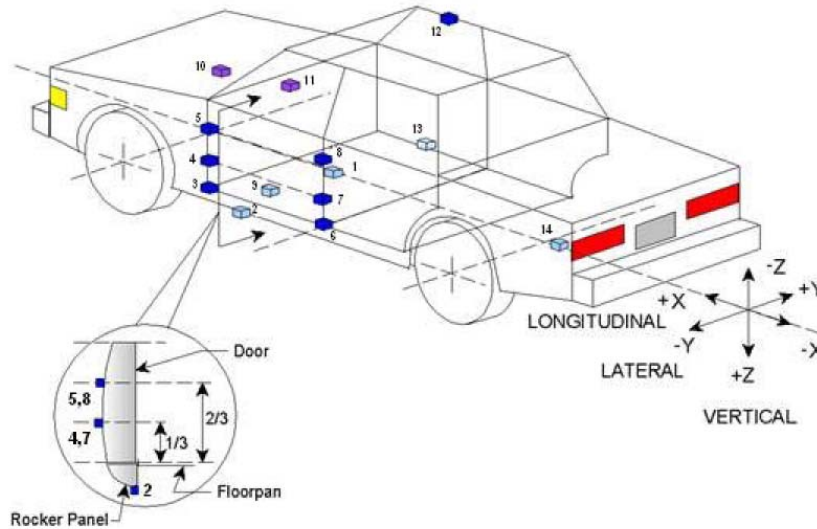
**INSTRUMENTATION**

Driver Dummy Channels	19
Vehicle Structure Accelerometers	15
Pole Load Cells	8
<b>Total</b>	<b>42</b>

**DATA SHEET NO. 6**

**TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

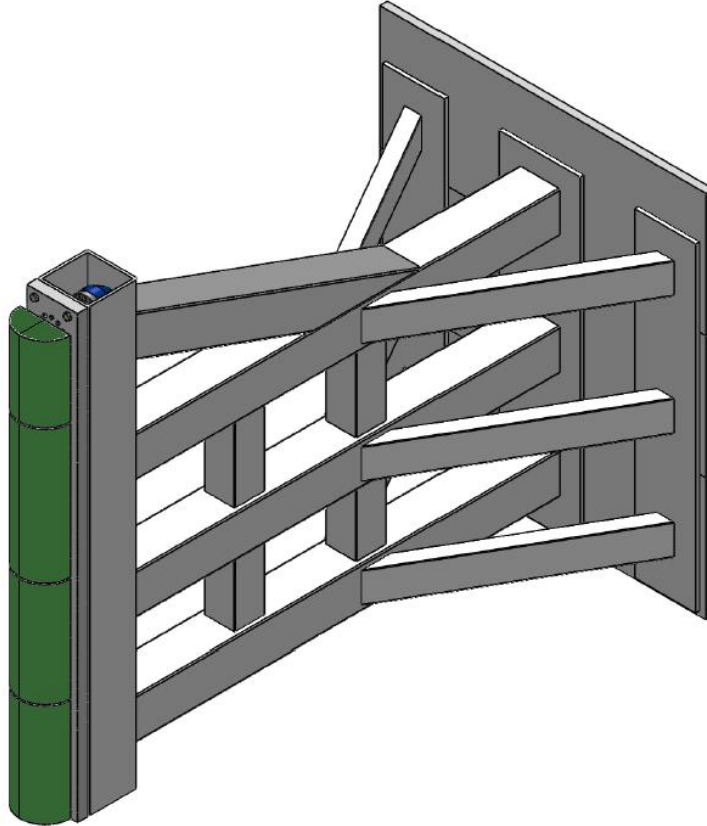


Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1880	0	-450
2	Left Floor Sill	2270	-705	-215
3	A-Pillar Sill	3010	-775	-440
4	A-Pillar Low	2990	-775	-575
5	A-Pillar Mid	2990	-775	-745
6	B-Pillar Sill	N/A	N/A	N/A
7	B-Pillar Low	N/A	N/A	N/A
8	B-Pillar Mid	N/A	N/A	N/A
9	Driver Seat Track	2410	-530	-390
10	Engine Top	3500	0	-810
11	Firewall	3200	300	-680
12	Right Roof	2100	420	-1605
13	Right Floor Sill	2480	660	-355
14	Rear Floorpan	1090	0	-530

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

**DATA SHEET NO. 7**  
**RIGID POLE LOAD CELL DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



ID	Units	Height From Ground
1	mm	87
2	mm	468
3	mm	648
4	mm	978
5	mm	1168
6	mm	1651
7	mm	1816
8	mm	2057

**DATA SHEET NO. 8**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Dummy Body Part	Driver SID-IIs Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag, Headrest
Left Side of Head	Curtain Airbag, Headrest
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Side Airbag
Upper Torso	Side Airbag, Seatback
Lower Torso	Side Airbag, Seatback
Left Hip	Side 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 System 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

**POST-TEST SEAT PERFORMANCE**

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	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

**DATA SHEET NO. 8 ... (CONTINUED)**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**POST-TEST STRUCTURAL OBSERVATIONS**

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

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

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

**IMPACT POINT LOCATION DATA**

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1033
Actual Impact Point (Aft of Front Axle)	mm		1040
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	-7
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	74.6
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	N/A*

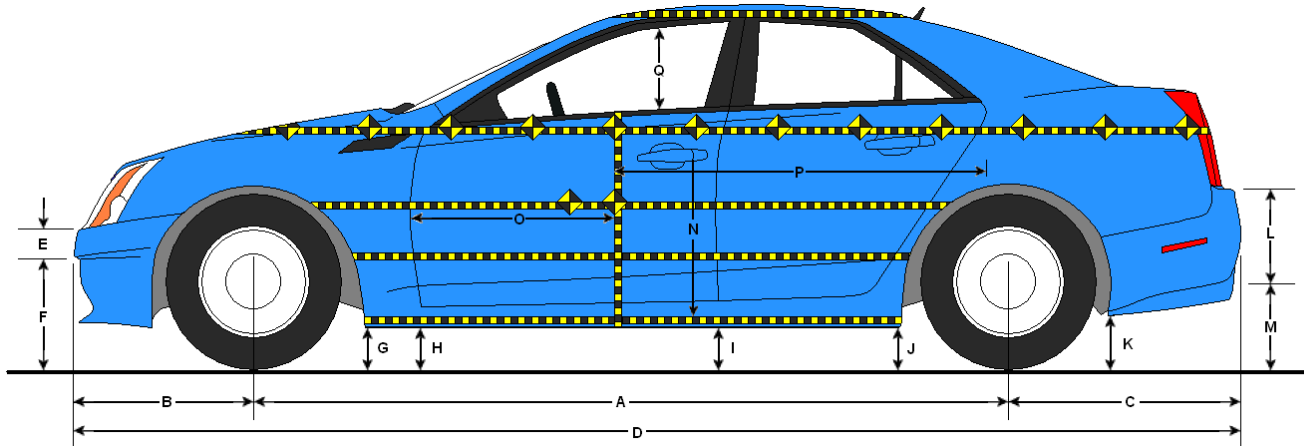
\*Trap No. 2 did not record a speed

\*Trap No. 2 did not record speed

**DATA SHEET NO. 9**

**TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



**LEFT SIDE VIEW**

All measurements in mm with tolerance of  $\pm 3\text{mm}$

**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

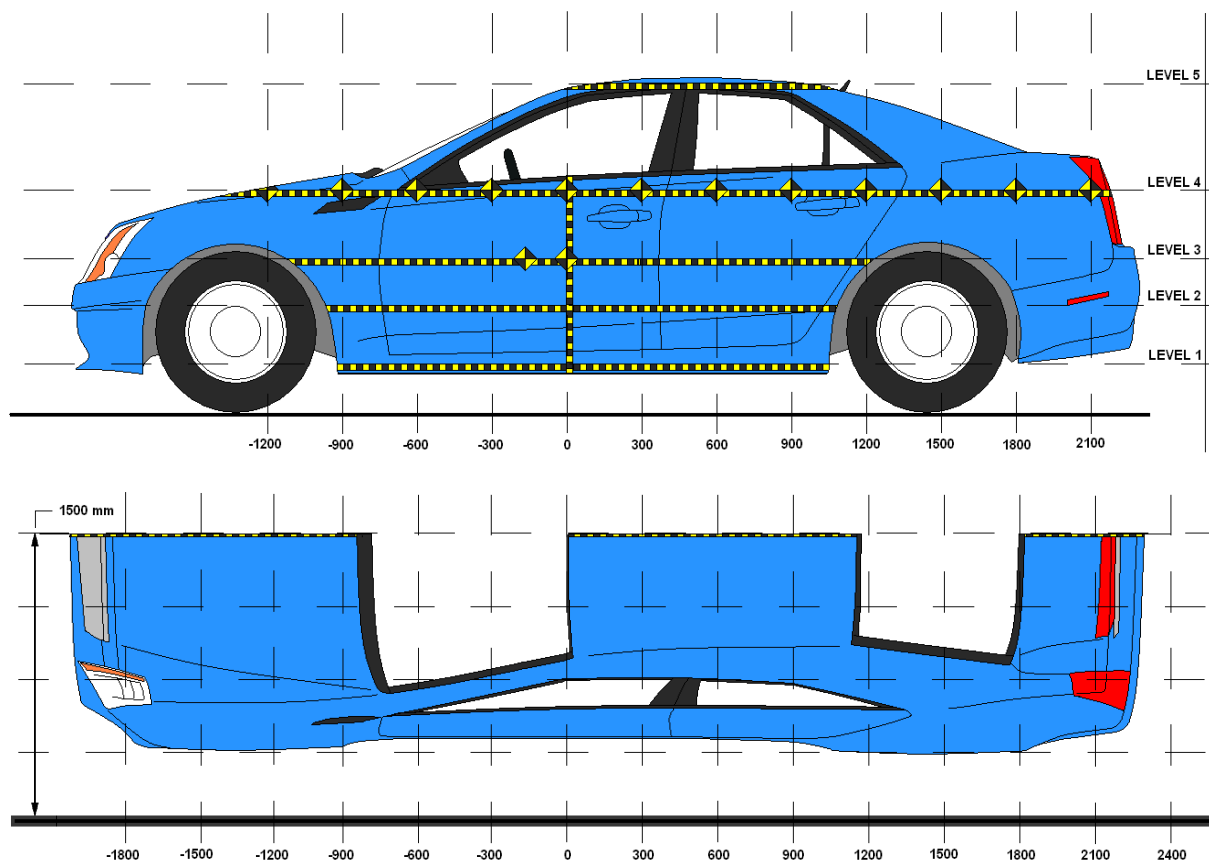
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2624	2582	-42
B	Front Axle to FSOV	860	882	22
C	Rear Axle to RSOV	808	803	-5
D	Total Length at Centerline	4281	4266	-15
E	Front Bumper Thickness	180	181	1
F	Front Bumper Bottom to Ground	493	476	-17
G	Sill Height at Front Wheel Well	335	312	-23
H	Sill Height at Front Door Leading Edge	348	270	-78
I	Sill Height at B-Pillar	235	217	-18
J1	Sill Height at Rear Wheel Well	240	237	-3
J2	Pinch Weld Height at Rear Wheel Well	227	219	-8
K	Sill Height Aft of Rear Wheel Well	343	337	-6
L	Rear Bumper Thickness	158	156	-2
M	Rear Bumper Bottom to Ground	479	481	2
N	Sill Height to Bottom of Front Window Sill	740	694	-46
O	Front Door Leading Edge to Impact CL	588	494	-94
P	Rear Door Trailing Edge to Impact CL	1594	1530	-64
Q	Front Window Opening	427	427	0
R	Right Side Length	3145	3146	1
S	Left Side Length	3149	3084	-65
T	Vehicle Width at B-Pillar	1736	1652	-84



## DATA SHEET NO. 10

### TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



**NOTE:** All measurements in mm with tolerance of  $\pm 3$ mm

#### MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	275	264	0
2	Occupant H-Point	653	334	0
3	Mid-Door	692	336	0
4	Window Sill	1017	278	0
5	Window Top	1516	104	150

**DATA SHEET NO. 10 ... (CONTINUED)**

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

**EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL**

	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750			624	740				597	707				-27	-33	
-600	668	626	626	720		657	614	612	703		-11	-12	-14	-17	
-450	678	626	626	715		720	705	704	728		42	79	78	13	
-300	680	627	626	712		787	780	780	802		107	153	154	90	
-150	680	628	626	698		860	866	868	881		180	238	242	183	
0	681	630	628	697	937	945	964	964	975	986	264	334	336	278	49
150	680	633	630	698	920	918	941	944	958	1024	238	308	314	260	104
300	681	636	633	699	916	834	834	838	852	995	153	198	205	153	79
450	679	640	637	696	917	779	743	740	776	970	100	103	103	80	53
600	680	643	641	690	919	745	714	711	754	947	65	71	70	64	28
750	683	648	646	689	920	719	700	698	733	936	36	52	52	44	16
900	684	639	640	685	922	701	673	674	713	932	17	34	34	28	10
1050	684	628	629	683	923	687	644	645	695	931	3	16	16	12	8
1200	679	621	619	684	926	671	619	617	678	930	-8	-2	-2	-6	4
1350			619	707	928			623	689	929			4	-18	1
1500				696	934				658	934				-38	0
1650				706	943				708	941				2	-2
1800				718					720					2	
1950															
2100															
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

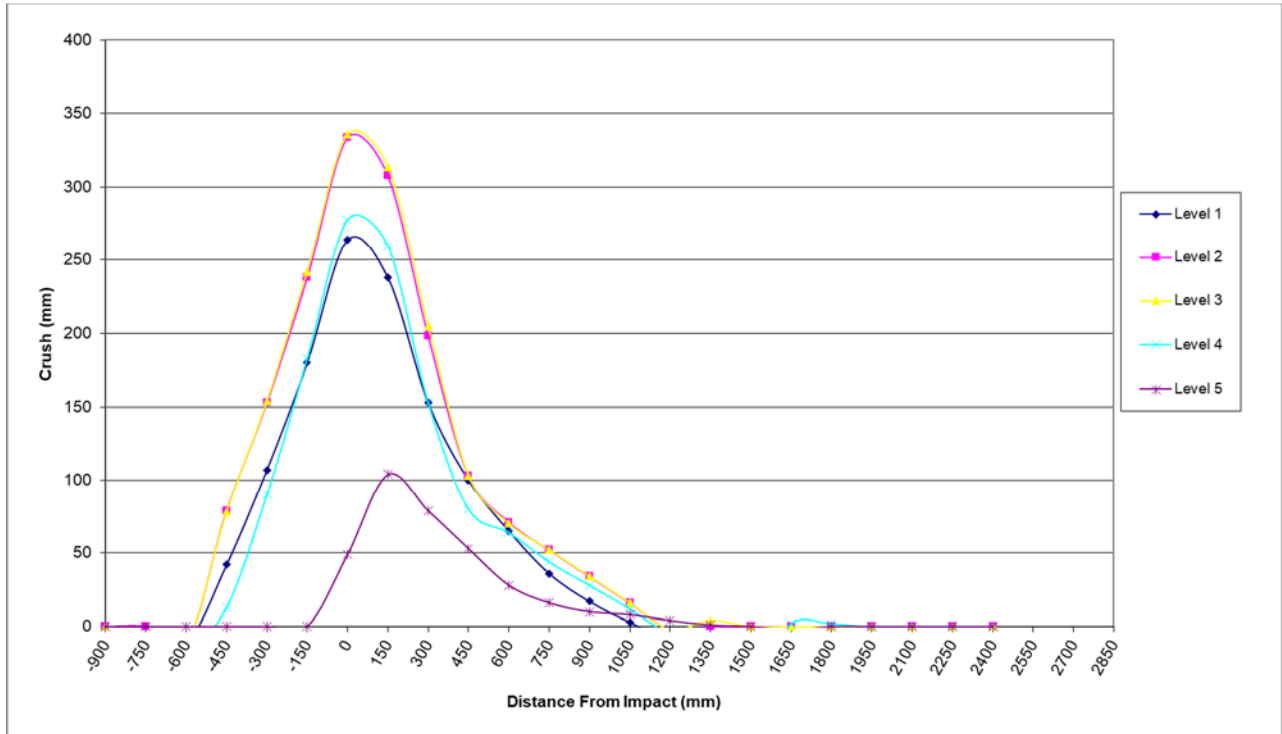
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV

NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test

Test Date: 03/13/19

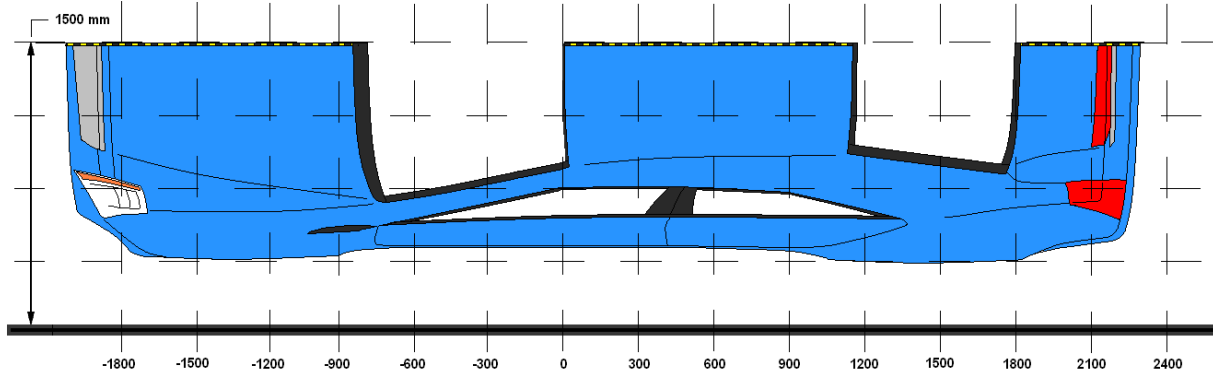


**DATA SHEET NO. 11**

**VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	1800	4	718	720	2
2	1200	5	926	930	4
3	750	2	648	700	52
4	300	3	633	838	205
5	-150	3	626	868	242
6	-750	3	624	597	-27

**DATA SHEET NO. 12**

**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207  
 Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19

Time of Impact: 16.7° C Test Time: 1:30 PM

From impact until vehicle motion ceases: 0 oz.

(Maximum allowable = 1 oz.)

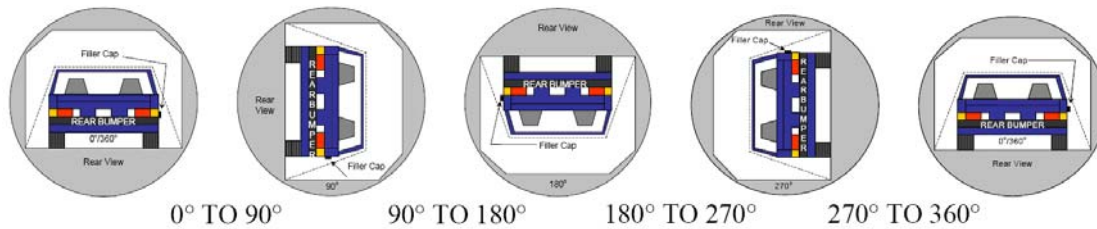
For the 5 minute period after motion ceases: 0 oz.

(Maximum allowable = 5 oz.)

For the following 25 minutes: 0 oz.

(Maximum allowable = 1 oz./minute)

Spillage Details: There was no Stoddard solvent spillage.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	82	300	382
90° To 180°	81	300	381
180° To 270°	79	300	379
270° To 360°	83	300	383

**FMVSS 301 SPILLAGE TABLE**

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

**SOLVENT SPILLAGE LOCATION TABLE**

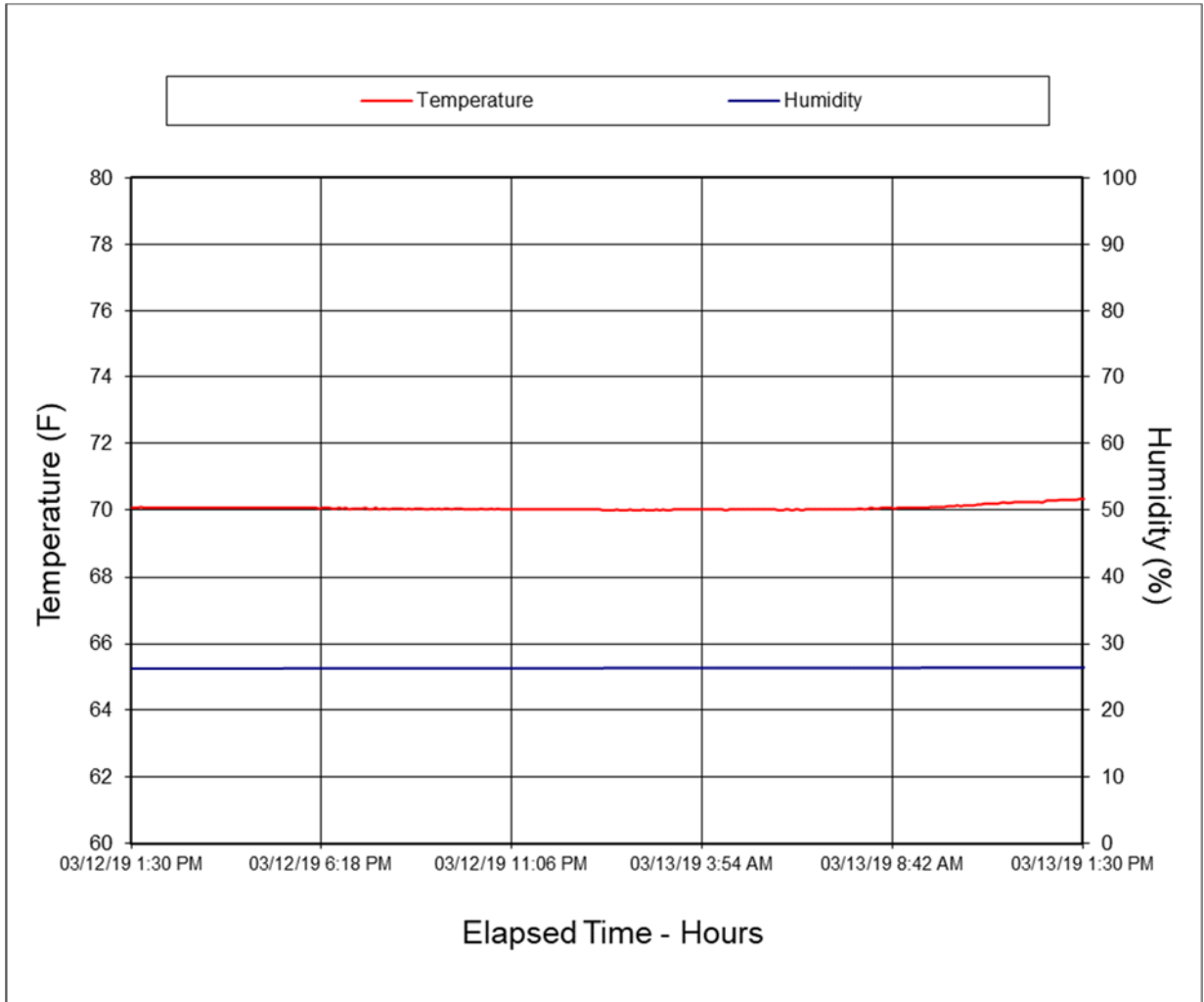
Test Phase	Spillage Location
0° To 90°	No Spillage Occurred
90° To 180°	No Spillage Occurred
180° To 270°	No Spillage Occurred
270° To 360°	No Spillage Occurred

**DATA SHEET NO. 13**

**DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195207

Test Program: NCAP Side Pole Impact Test Test Date: 03/13/19



**APPENDIX A  
PHOTOGRAPHS**

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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



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



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



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



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



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



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



FIGURE 11. Pre-Test Rear View of Test Vehicle

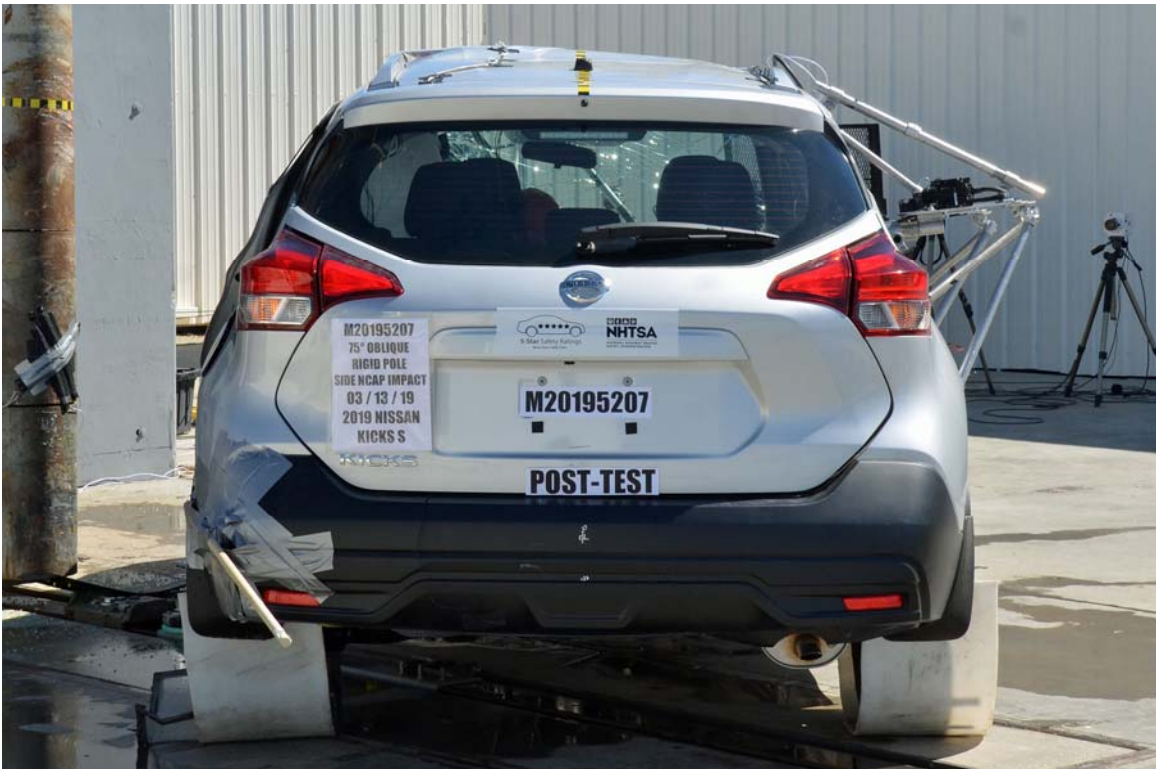


FIGURE 12. Post-Test Rear View of Test Vehicle





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



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



FIGURE 15. Pre-Test Overhead View of Test Area

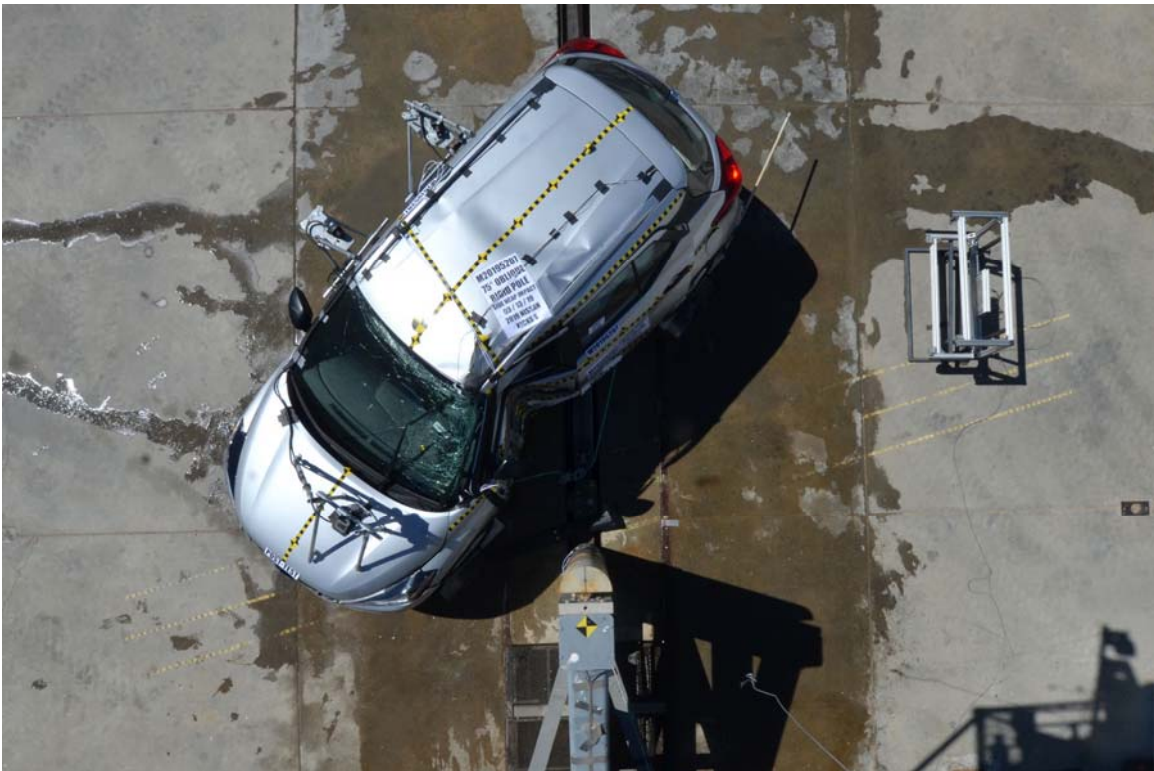


FIGURE 16. Post-Test Overhead View of Test Area



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



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

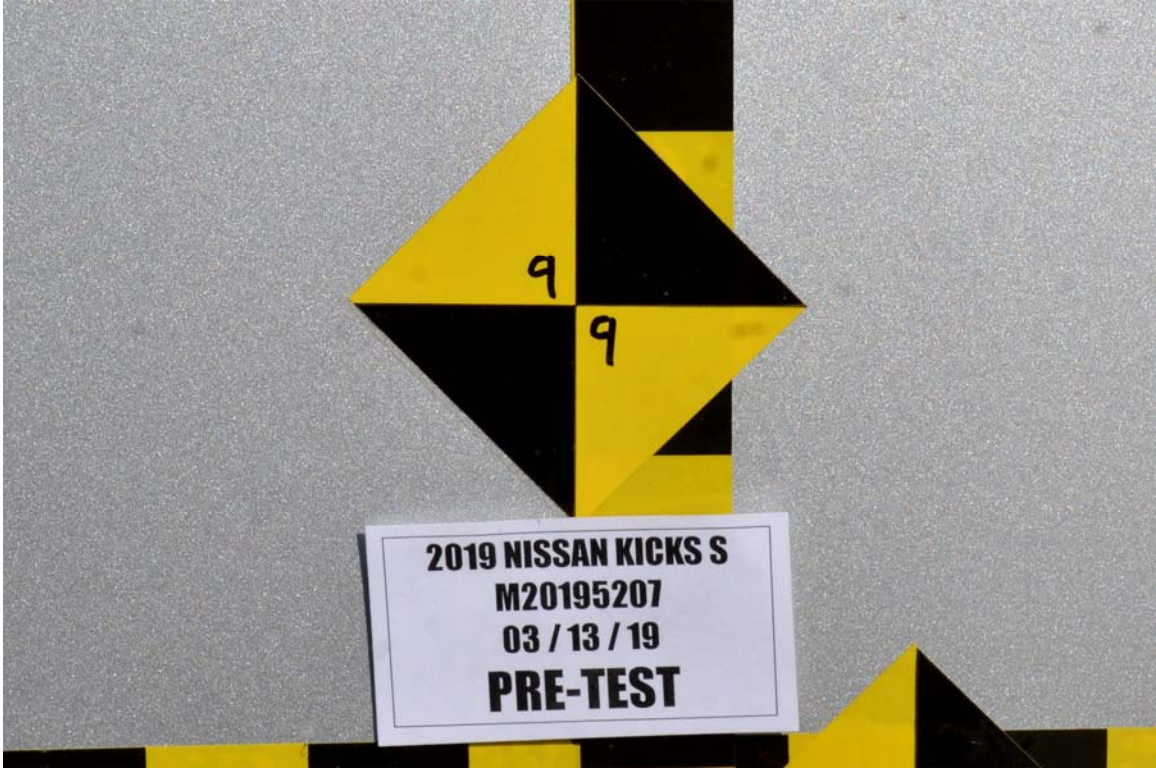


FIGURE 19. Pre-Test Close-Up View of Impact Point Target



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



FIGURE 21. Pre-Test Front Close-Up View of Dummy Head and Chest

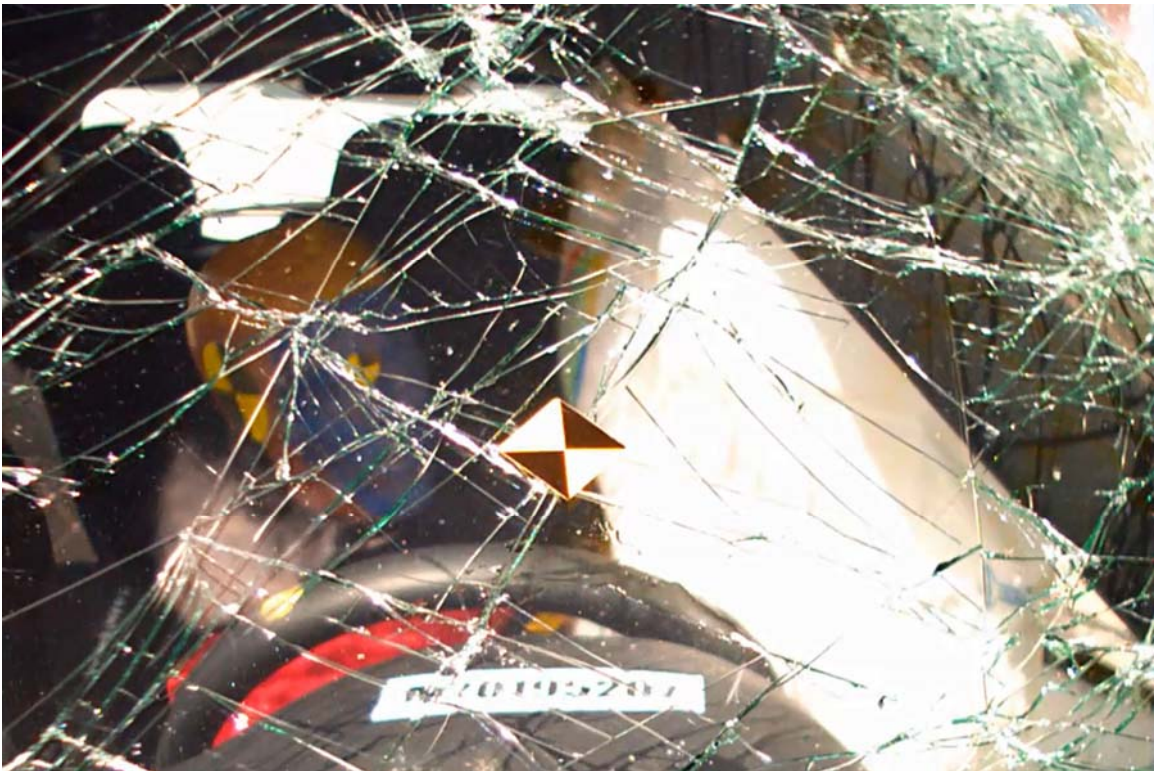


FIGURE 22. Post-Test Front Close-Up View of Dummy



FIGURE 23. Pre-Test Left Side View of Dummy Showing Belt and Chalking



FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 26. Pre-Test Frontal View of Seat Back Prior to Dummy Positioning



FIGURE 27. Pre-Test Frontal Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 28. Pre-Test Overhead View of Seat Pan Prior to Dummy Positioning





FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



FIGURE 30. Pre-Test Left Side View of Dummy's Neck  
Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test Left Side View of Dummy's Head  
Showing Dummy's Head is Level



FIGURE 32. Pre-Test Placement of Dummy's Feet



FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. View of Disengaged Parking Brake



FIGURE 36. Pre-Test View of Parking Brake



FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 38. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 39. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 40. Pre-Test Dummy and Door Clearance View

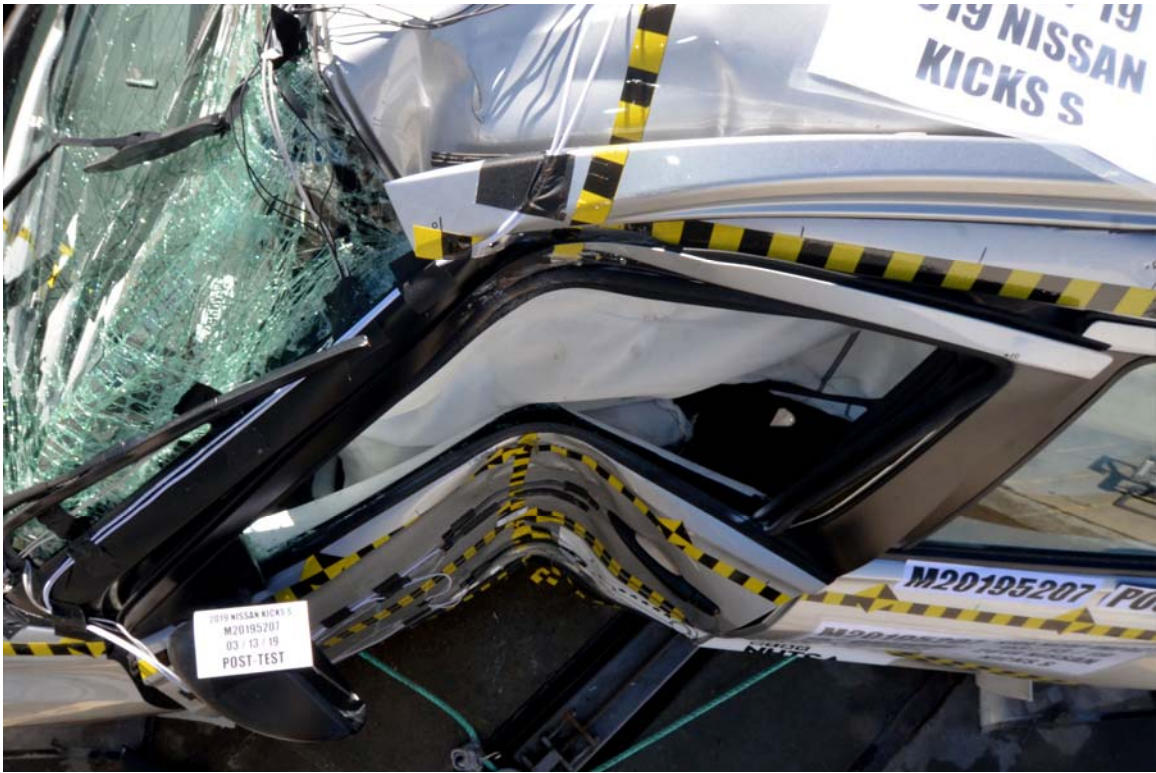


FIGURE 41. Post-Test Dummy and Door Clearance View



FIGURE 42. Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



FIGURE 43. Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



FIGURE 44. Pre-Test Inner Door Panel View





FIGURE 45. Post-Test Inner Door Panel View Showing Dummy Contact Locations



FIGURE 46. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



FIGURE 47. Post-Test Dummy Close-Up Head Contact With Side Airbag View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact With Vehicle Interior View



FIGURE 49. Post-Test Dummy Close-Up Torso Contact With Side Airbag View



FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact With Vehicle Interior View



FIGURE 51. Post-Test Dummy Close-Up Pelvis Contact With Side Airbag View



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



FIGURE 53. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 54. Post-Test View of Fuel Filler Cap or Fuel Filler Neck

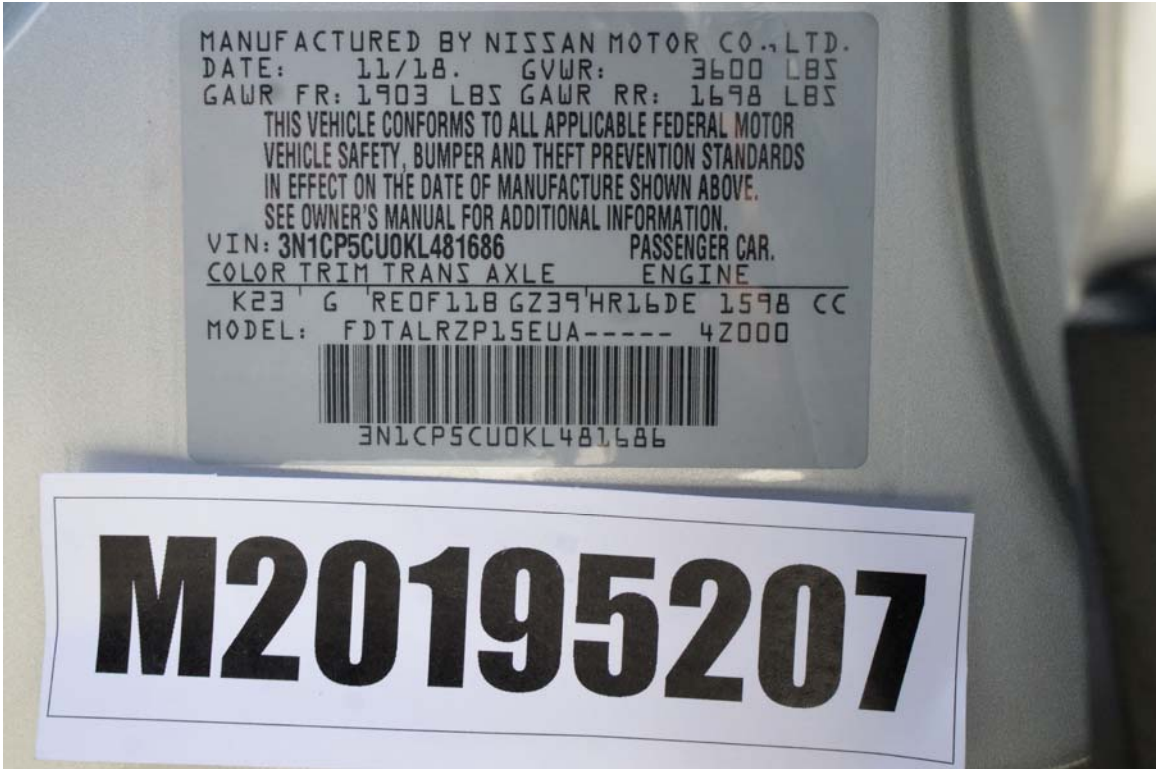


FIGURE 55. Close-Up View of Vehicle's Certification Label

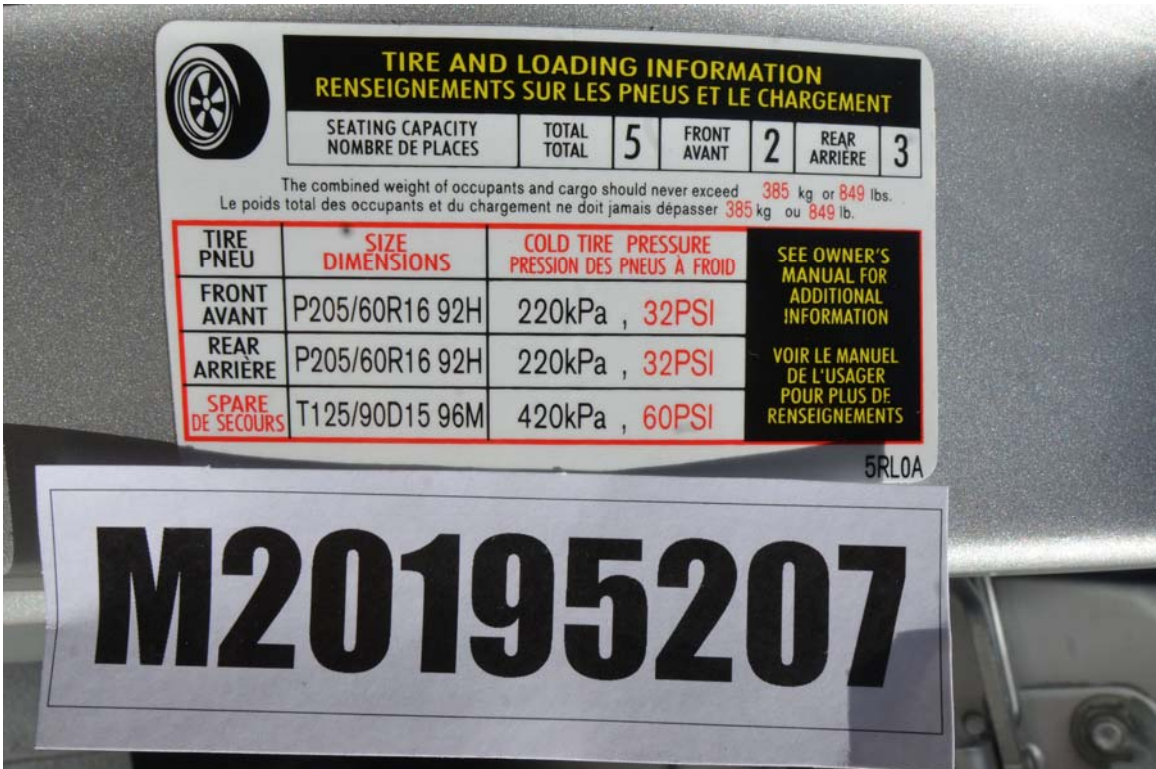


FIGURE 56. Close-Up View of Vehicle's Tire Information Placard or Label



FIGURE 57. Pre-Test Pole Barrier Front View



FIGURE 58. Post-Test Pole Barrier Front View



FIGURE 59. Pre-Test Pole Barrier Side View



FIGURE 60. Post-Test Pole Barrier Side View



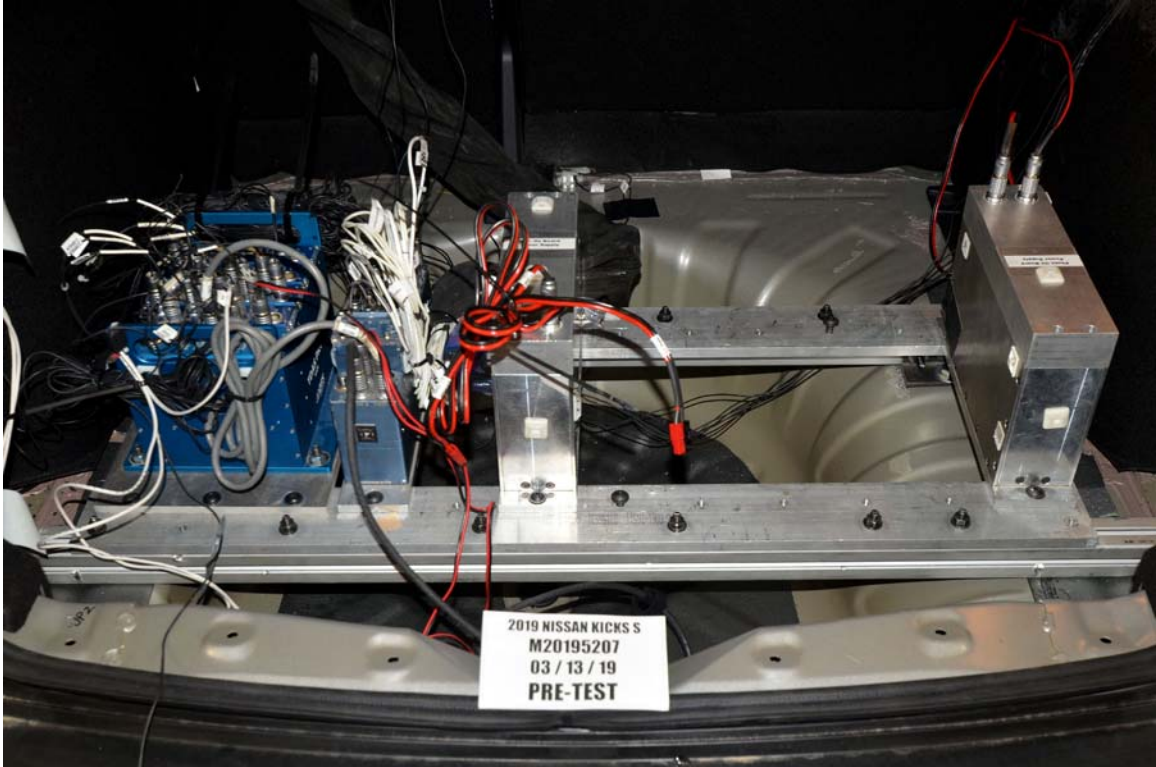


FIGURE 61. Pre-Test Ballast View



FIGURE 62. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 63. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 64. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 65. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 66. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 67. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 68. Impact Event

## 2019 NISSAN KICKS S CVT

Scan QR code for general model information & options

EPA DOT Fuel Economy and Environment		Gasoline Vehicle																		
<b>Fuel Economy</b> <b>33 MPG</b> <small>combined city/hwy</small>																				
<small>MIDSIZE CARS range from 14 to 136 MPG. The best vehicle rates 136 MPG.</small>																				
<b>You save \$1,250</b> <small>in fuel costs over 5 years compared to the average new vehicle.</small>																				
<b>Annual fuel COST \$1,150</b>																				
<b>Fuel Economy &amp; Greenhouse Gas Rating</b>																				
<small>Annual fuel cost will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 27 MPG and costs \$7,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$2.35 per gallon. EPA's miles per gallon estimate. Vehicle emissions are a significant cause of climate change and smog.</small>																				
<b>GOVERNMENT 5-STAR SAFETY RATINGS</b>																				
<b>Overall Vehicle Score Not Rated</b> <small>Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.</small>																				
<table border="1"> <tr> <th>Frontal Crash</th> <th>Driver Passenger</th> <th>Not Rated</th> </tr> <tr> <td colspan="3"> <small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small> </td> </tr> <tr> <th>Side Crash</th> <th>Front seat Rear seat</th> <th>Not Rated</th> </tr> <tr> <td colspan="3"> <small>Based on the risk of injury in a side impact.</small> </td> </tr> <tr> <th>Rollover</th> <th colspan="2">Not Rated</th> </tr> <tr> <td colspan="3"> <small>Based on the risk of rollover in a single-vehicle crash.</small> </td> </tr> </table>			Frontal Crash	Driver Passenger	Not Rated	<small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small>			Side Crash	Front seat Rear seat	Not Rated	<small>Based on the risk of injury in a side impact.</small>			Rollover	Not Rated		<small>Based on the risk of rollover in a single-vehicle crash.</small>		
Frontal Crash	Driver Passenger	Not Rated																		
<small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small>																				
Side Crash	Front seat Rear seat	Not Rated																		
<small>Based on the risk of injury in a side impact.</small>																				
Rollover	Not Rated																			
<small>Based on the risk of rollover in a single-vehicle crash.</small>																				
<b>DELIVERY</b> VEHICLE COLORS: EXT: BRILLIANT SILVE INT: CHARCOAL FINAL ASSEMBLY POINT: AQUASURV JMX TRUCK TRANSPORT METHOD: TRUCK DEALER: LARRY H MILLER NISSAN SB 735 WEST SHOWCASE DRIVE S SAN BERNARDINO CA 92408 VIN: 3N1CJ3CU0L481696 EMS: 50 STATE EMISSIONS MDL: 21016-481696 K23-G OPT: E-3BC00L02N90 20181207230547N35661																				

**Manufacturer's Suggested Retail Base Price:** \$18,540.00

**Options Included by Manufacturer:**

- SPLASH GUARDS 1/0.00
- CARPETED FLOOR MATS & CARGO MAT 215.00
- DOOR SILL PLATES 30.00

**DESTINATION CHARGES:** 1,045.00

**Total:** \$20,000.00

**Standard Equipment Included at No Extra Charge**

**MECHANICAL & PERFORMANCE**

- 1.8L DDCi 16-Valve 4-Cylinder Engine
- Xtronic CVT (Continuously Variable Transmission)
- Power-Assisted Vented Front Disc / Rear Drum Brakes
- 18" Steel Wheels w/ Full Wheel Covers
- Hill Start Assist

**SAFETY & SECURITY**

- Dual-Stage Supplemental Driver and Front Passenger Air Bags
- Front Seat-Mounted Side Impact Supplemental Air Bags
- Side Impact Supplemental Curtain Air Bags w/ Roll-over Sensor
- Driver Knee Supplemental Air Bag
- Anti-Lock Braking System (ABS)
- Traction Control System (TCS)
- Vehicle Dynamic Control (VDC)
- Electronic Brake Force Distribution (EBD)
- Tire Pressure Monitoring System (TPMS) w/ Easy Fill Tire Alert
- Nissan Vehicle Immobilizer System
- Automatic Emergency Braking (AEB)

**COMFORT & CONVENIENCE**

- Cruise Control with Steering Wheel Mounted Controls
- Manual Air Conditioning
- Remote Keyless Entry w/ Push Button Start
- 7" Color Touchscreen Display Audio
- System w/ 6 Speakers
- Bluetooth® Hands-Free Phone System+ Streaming audio via Bluetooth®
- SiEB Eyes Free+ Audio and Bluetooth® Steering Wheel Switches
- 2 USB Ports (2 charge only)
- Rear-View Monitor (RVM)
- Tilt/Telescoping Steering Wheel
- Power Windows
- 1 Touch Up/Down (Driver & Front Passenger)
- 4-Way Adjustable Cloth Front Bucket Seats
- Power Door Locks w/ Auto-Locking Feature
- Driver Seat Armrest and Seat Lifter
- 90/40 Split Rear Seats

**EXTERIOR**

- Roof Rails w/ Silver Paint
- Manual Folding Power Outside Mirrors
- Front and Rear Bumper with Black Fascia Accent
- Variable Intermittent Wipers w/ Mist Rear Wiper
- Intelligent Auto Headlights (I-AH)

\*For more information, see dealer, see dealer, owner's manual, or www.NissanUSA.com/consumerimportant-information

\*\*Optional equipment replaces standard equipment where applicable

FIGURE 69. Monroney Label

**ADJUSTABLE HEAD RESTRAINT/HEADREST COMPONENTS**

1. Removable head restraint/headrest
2. Multiple notches
3. Lock knob
4. Stalks

**NON-ADJUSTABLE HEAD RESTRAINT/HEADREST COMPONENTS**

1. Removable head restraint/headrest
2. Multiple notches
3. Lock knob
4. Stalks

**REMOVABLE (without Bose head restraint/headrest speaker system only)**

1. Remove the head restraint/headrest, up to highest position.

2. Push and hold the lock knob.

3. Remove the head restraint/headrest from the seat.

4. Push the head restraint/headrest away in a secure place so it is not used in the vehicle.

**INSTALL**

1. Align the head restraint/headrest stalks with the holes in the seat. Make sure that the head restraint/headrest is facing the correct direction. The stalk with the notch (protrusion) must be installed in the hole with the lock knob.

2. Push and hold the lock knob and push the head restraint/headrest down.

3. Properly adjust the head restraint/headrest before an occupant uses the seating position.

**ADJUST**

For adjustable head restraint/headrest: Adjust the head restraint/headrest so the center is level with the center of your ears if your ear position is still higher than the recommended alignment, place the head restraint/headrest at the highest position.

For non-adjustable head restraint/headrest: Make sure the head restraint/headrest is positioned so the lock knob is engaged in the notch before riding in that designated seating position.

**RAISE**

1. Push the head restraint/headrest, pull it up to highest position.

2. Make sure the head restraint/headrest is positioned so the lock knob is engaged in the notch before riding in that designated seating position.

**LOWER**

1. To lower, push and hold the lock knob and push the head restraint/headrest down.

2. Make sure the head restraint/headrest is positioned so the lock knob is engaged in the notch before riding in that designated seating position.

FIGURE 70. Head Restraint Use and Adjustment

A-35

TR-P39031-01-NC

# Photograph Not Applicable

FIGURE 71. Post-Test View of Shattered Vehicle Inner Door Pane

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

## TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary	B-1
2	Driver Head Acceleration (Y) Primary	B-1
3	Driver Head Acceleration (Z) Primary	B-1
4	Driver Head Acceleration Primary Resultant	B-1
5	Driver Lower Spine T12 Acceleration (X)	B-2
6	Driver Lower Spine T12 Acceleration (Y)	B-2
7	Driver Lower Spine T12 Acceleration (Z)	B-2
8	Driver Lower Spine T12 Acceleration Resultant	B-2
9	Driver Iliac Wing Force on Impact Side (Y)	B-3
10	Driver Acetabulum Force on Impact Side (Y)	B-3
11	Driver Total Pelvis Force on Impact Side (Y)	B-3

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.gov](http://www.NHTSA.gov)

### Additional Driver Dummy Instrumentation Data

Driver Head Acceleration Redundant (X)  
Driver Head Acceleration Redundant (Y)  
Driver Head Acceleration Redundant (Z)  
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)



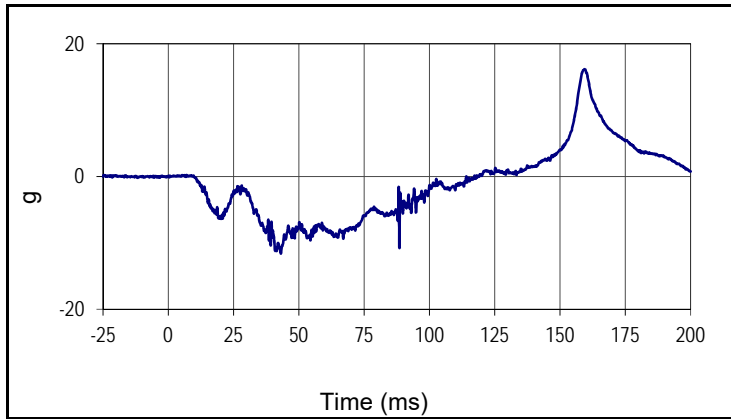
Left B-Pillar Sill Acceleration  
Left Lower B-Pillar Acceleration (Y)  
Left Mid B-Pillar Acceleration (Y)  
Driver Seat Track at Dummy Hip Point Acceleration (Y)  
Engine Top Acceleration (X)  
Engine Top Acceleration (Y)  
Firewall Center Acceleration (Y)  
Right Roof at Vertical Impact Reference 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**

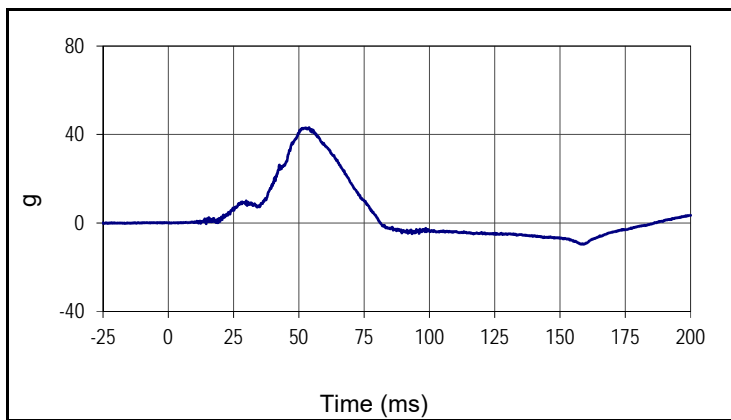
Load Cell Pole Barrier #1 Force (Y)  
Load Cell Pole Barrier #2 Force (Y)  
Load Cell Pole Barrier #3 Force (Y)  
Load Cell Pole Barrier #4 Force (Y)  
Load Cell Pole Barrier #5 Force (Y)  
Load Cell Pole Barrier #6 Force (Y)  
Load Cell Pole Barrier #7 Force (Y)  
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side Pole Impact Test

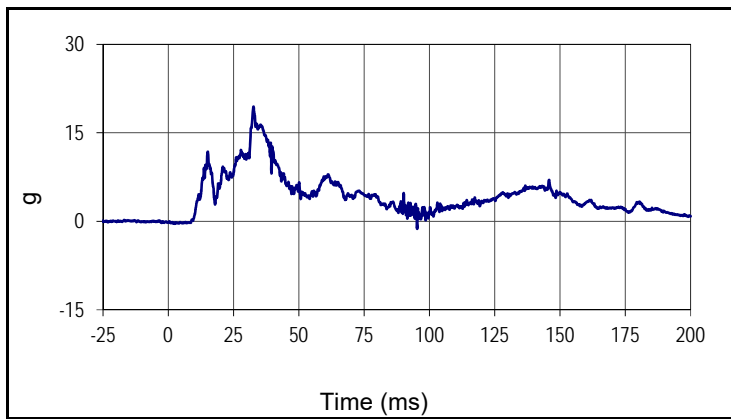
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 Test Date: 3/13/2019



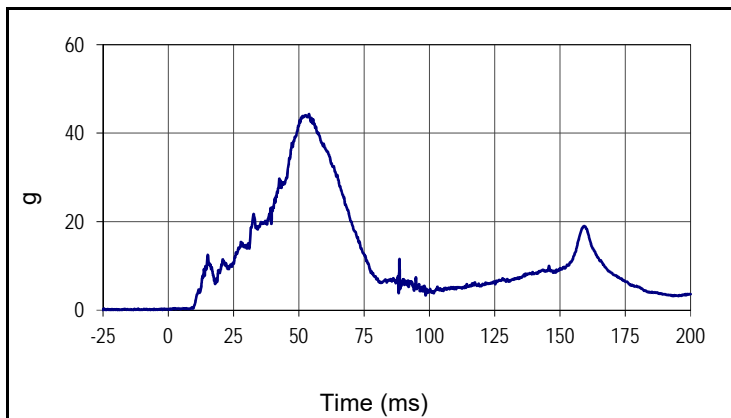
Curve Description			
Driver Head Acceleration X Primary			
Plot No.		SAE Class	Units
001		1000	g
Max	Time	Min	Time
16.1	159.3	-11.6	43.1



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.		SAE Class	Units
002		1000	g
Max	Time	Min	Time
43.2	53.9	-9.6	158.3



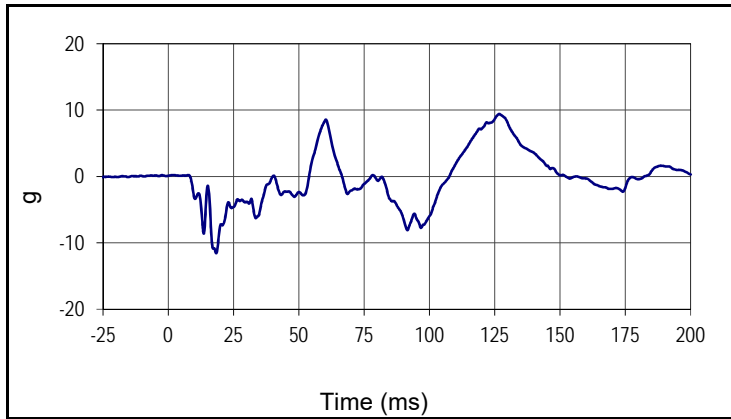
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.		SAE Class	Units
003		1000	g
Max	Time	Min	Time
19.4	32.6	-1.3	95.3



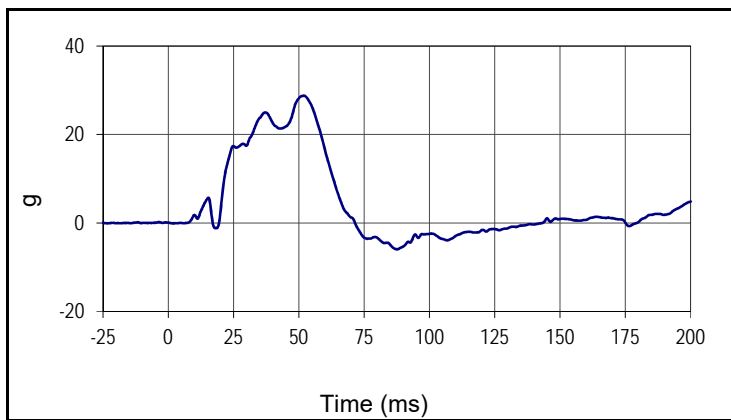
Curve Description			
Driver Head Acceleration Primary Resultant			
Plot No.		SAE Class	Units
004		1000	g
Max	Time	Min	Time
44.3	53.9	0.1	0.6

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side Pole Impact Test

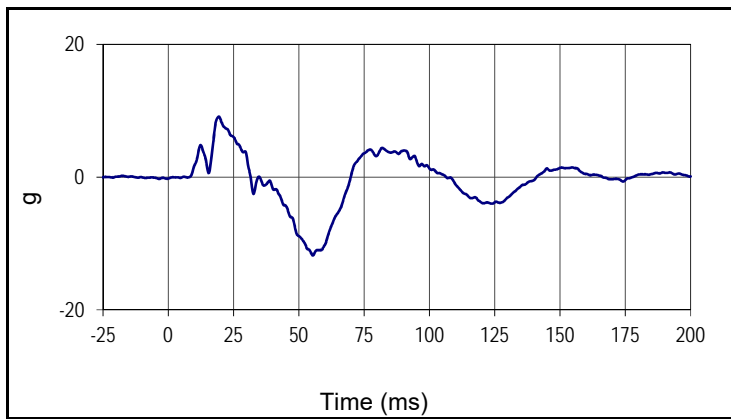
NHTSA No.: M20195207  
 Test Date: 3/13/2019



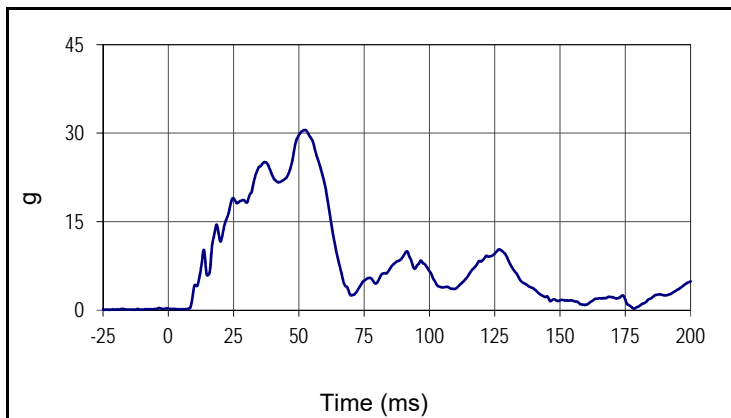
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.		SAE Class	Units
005		180	g
Max	Time	Min	Time
9.4	126.7	-11.6	18.4



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.		SAE Class	Units
006		180	g
Max	Time	Min	Time
28.8	51.9	-5.9	87.5



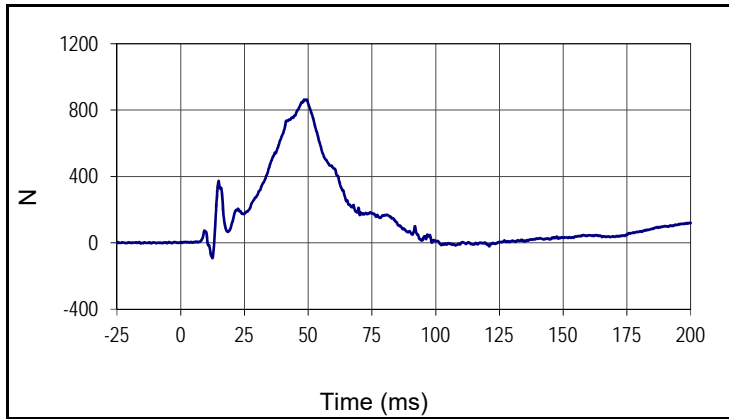
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.		SAE Class	Units
007		180	g
Max	Time	Min	Time
9.1	19.4	-11.8	55.3



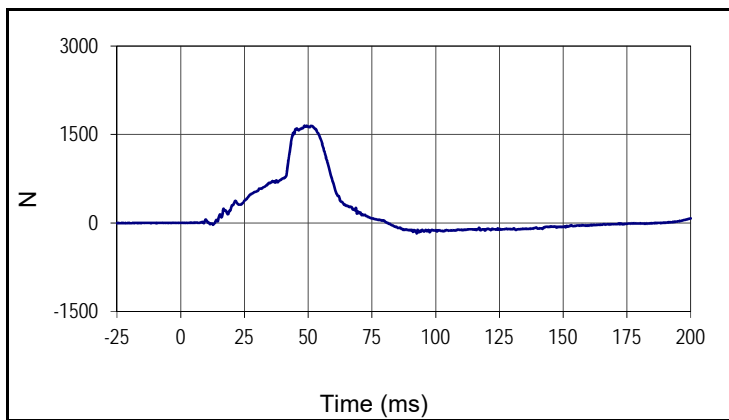
Curve Description			
Driver Lower Spine T12 Acceleration Resultant			
Plot No.		SAE Class	Units
008		180	g
Max	Time	Min	Time
30.5	52.2	0.1	6.6

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side Pole Impact Test

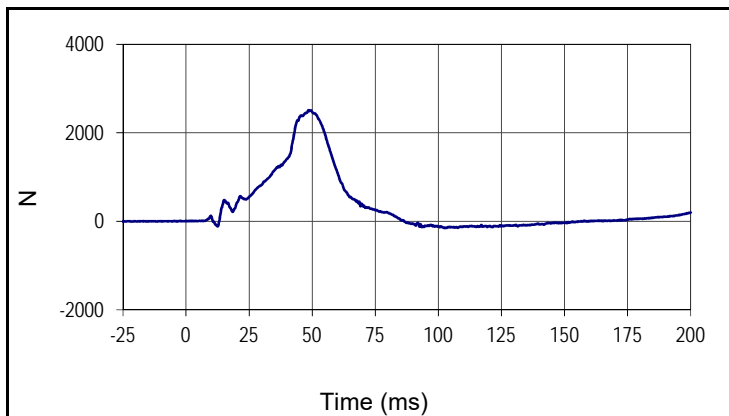
NHTSA No.: M20195207  
 Test Date: 3/13/2019



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.		SAE Class	Units
009		600	N
Max	Time	Min	Time
863.4	48.4	-92.5	12.4



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.		SAE Class	Units
010		600	N
Max	Time	Min	Time
1649.0	48.5	-174.8	92.5



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.		SAE Class	Units
011		600	N
Max	Time	Min	Time
2512.3	48.5	-150.6	103.2

**APPENDIX C**  
**ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

**APPENDIX C**  
**Pre-Test ATD Configuration And Performance Verification Data**  
**SID-IIs Small Side Impact ATD**  
**S/N: 299**

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	44	Pass
A - Sitting Height	mm	772	788	782	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	83	Pass
D - H Point From Seatback	mm	141	151	149	Pass
E - Shoulder Pivot From Backline	mm	97	107	105	Pass
F - Thigh Clearance	mm	119	135	126	Pass
G - Head Breadth	mm	140	148	143	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	186	Pass
J - Head Circumference	mm	541	551	547	Pass
K - Buttock To Knee Length	mm	514	540	524	Pass
L - Popliteal Height	mm	343	369	350	Pass
K - Knee Pivot To Floor Height	mm	392	409	398	Pass
N - Buttock Popliteal Length	mm	416	442	437	Pass
O - Chest Depth W/O Jacket	mm	195	211	207	Pass
P - Foot Length	mm	216	232	221	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	256	Pass
S - Knee Joint To Seatback	mm	477	493	486	Pass
V - Shoulder Width	mm	341	357	345	Pass
W - Foot Width	mm	78	94	84	Pass
Y - Chest Circumference W/Jacket	mm	851	881	862	Pass
Z - Waist Circumference	mm	761	791	779	Pass
Overall Test Results					Pass

Technician: \_\_\_\_\_



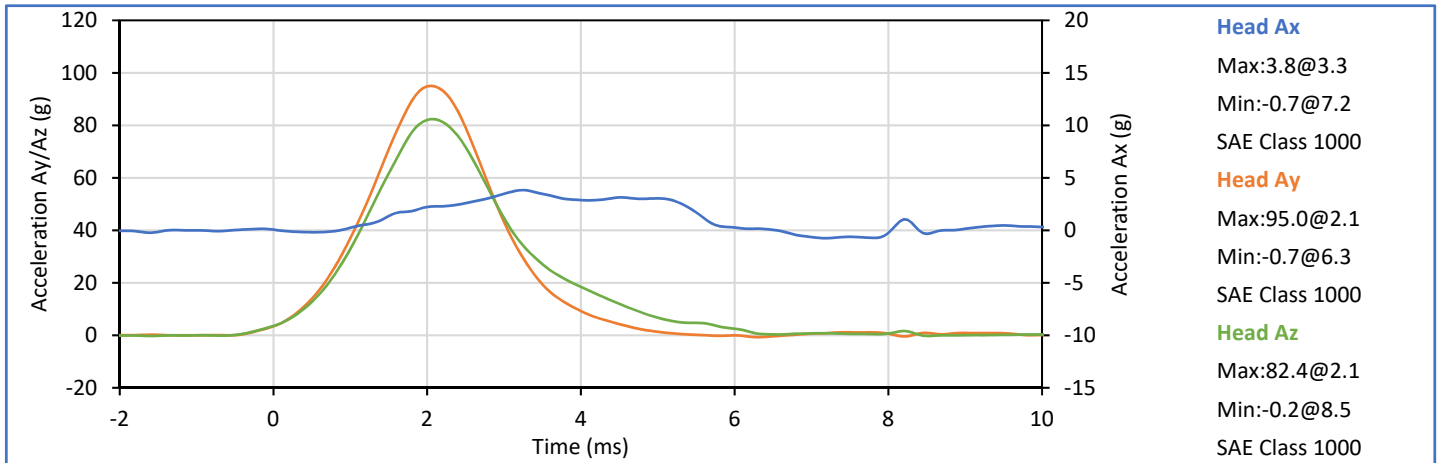
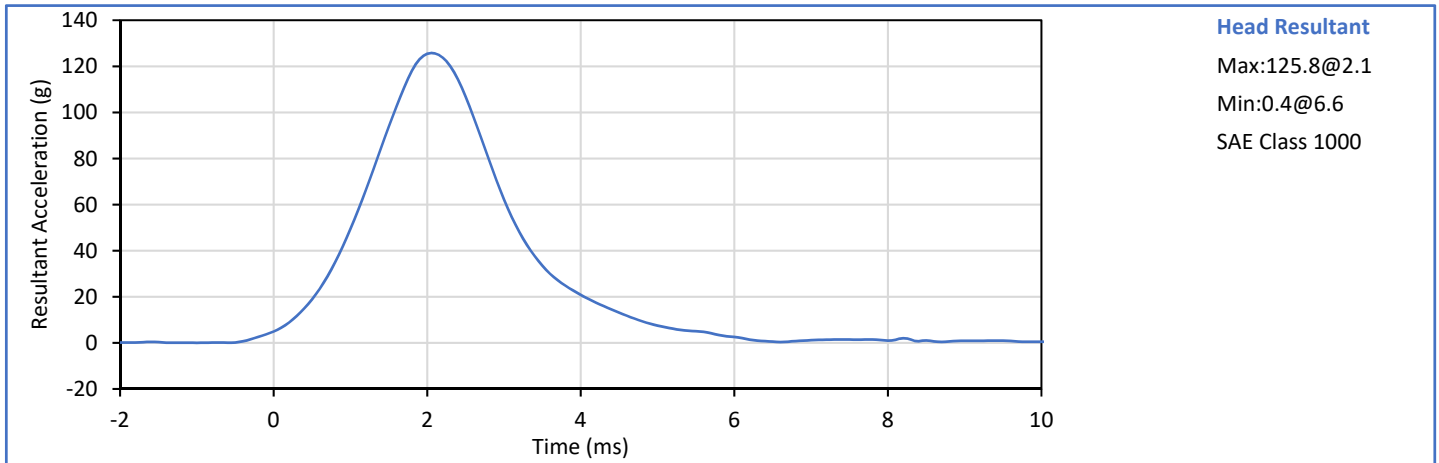
J. Hernandez

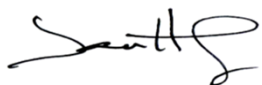
Approved By: \_\_\_\_\_




P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.2	Pass
Laboratory Humidity	%	10	70	40	Pass
Peak Resultant Acceleration	g	115.0	137.0	125.8	Pass
Peak Head Ax	g	-15.0	15.0	-0.7	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
Overall Test Results					Pass

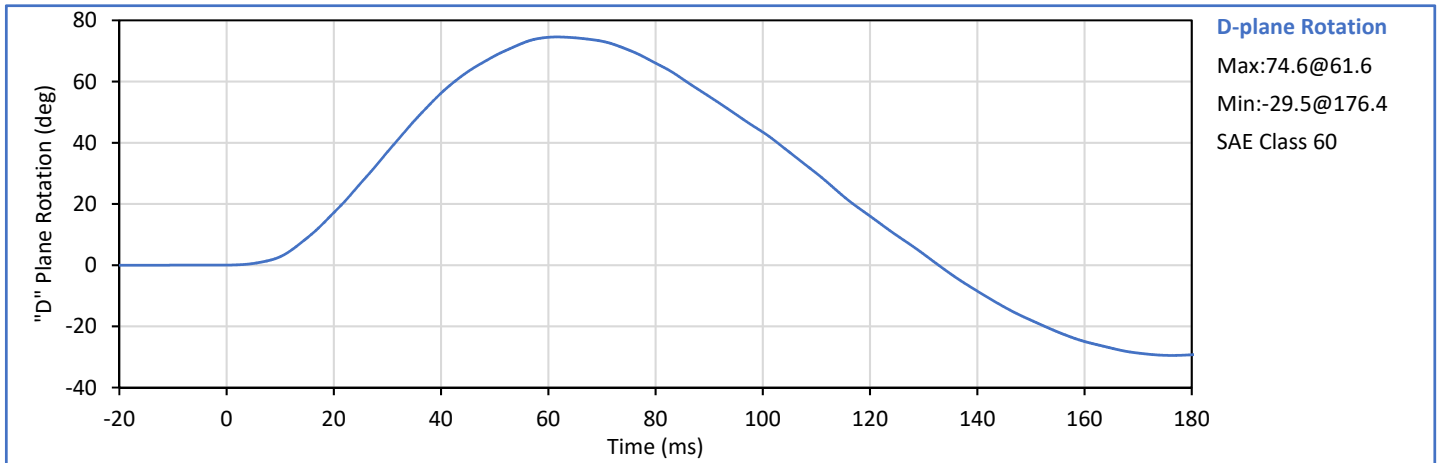
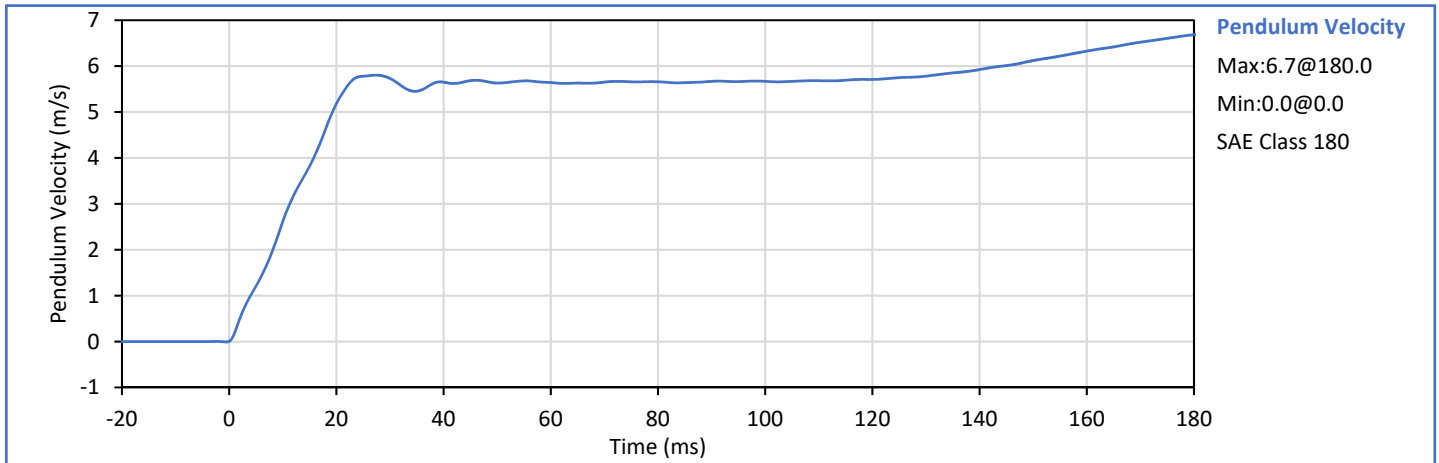


Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

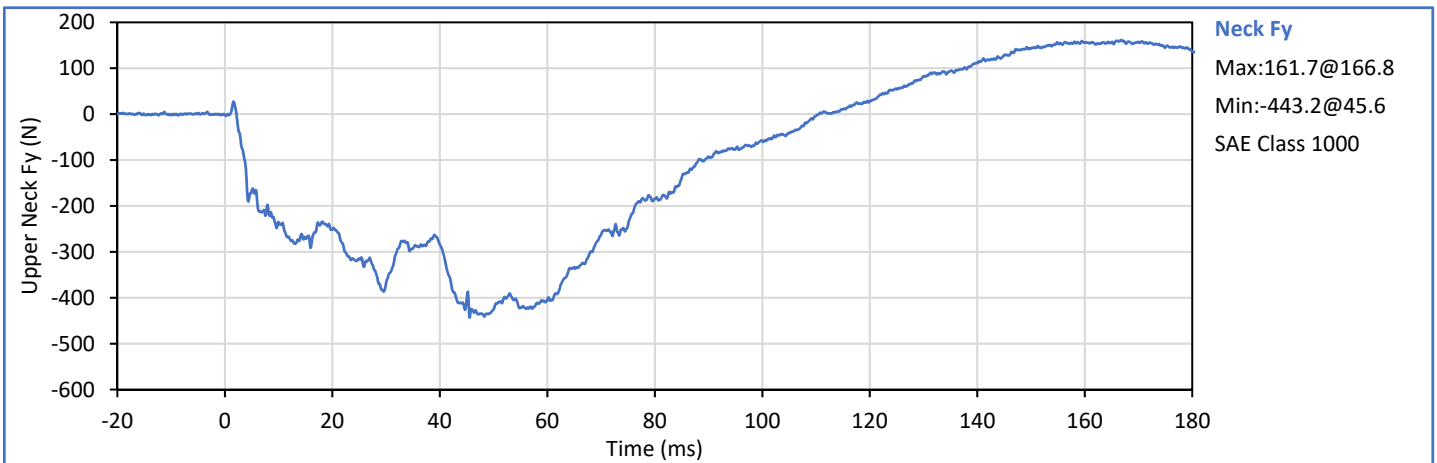
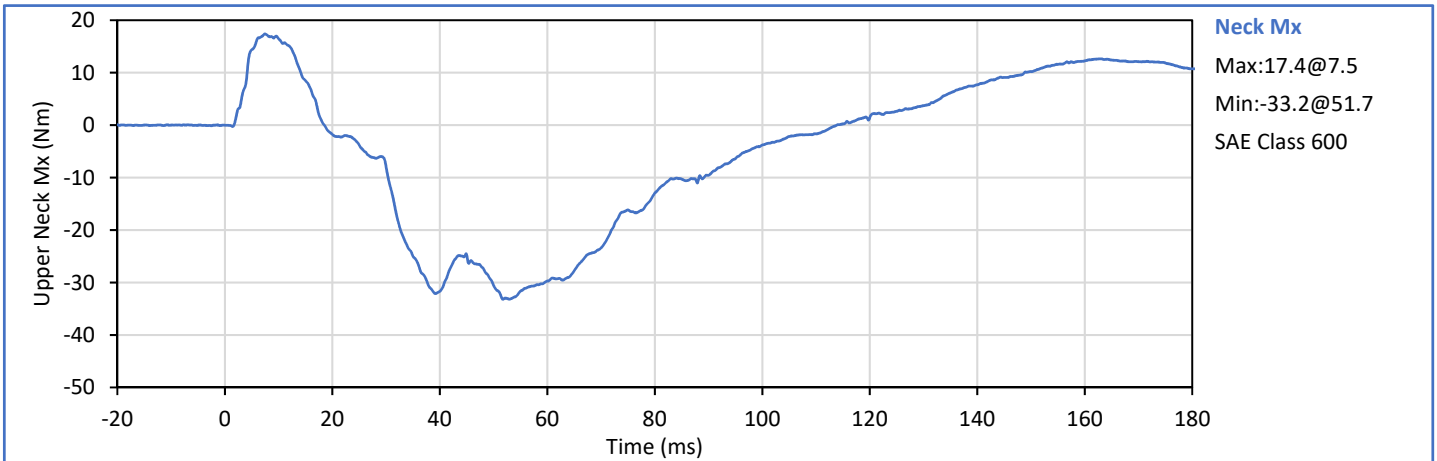
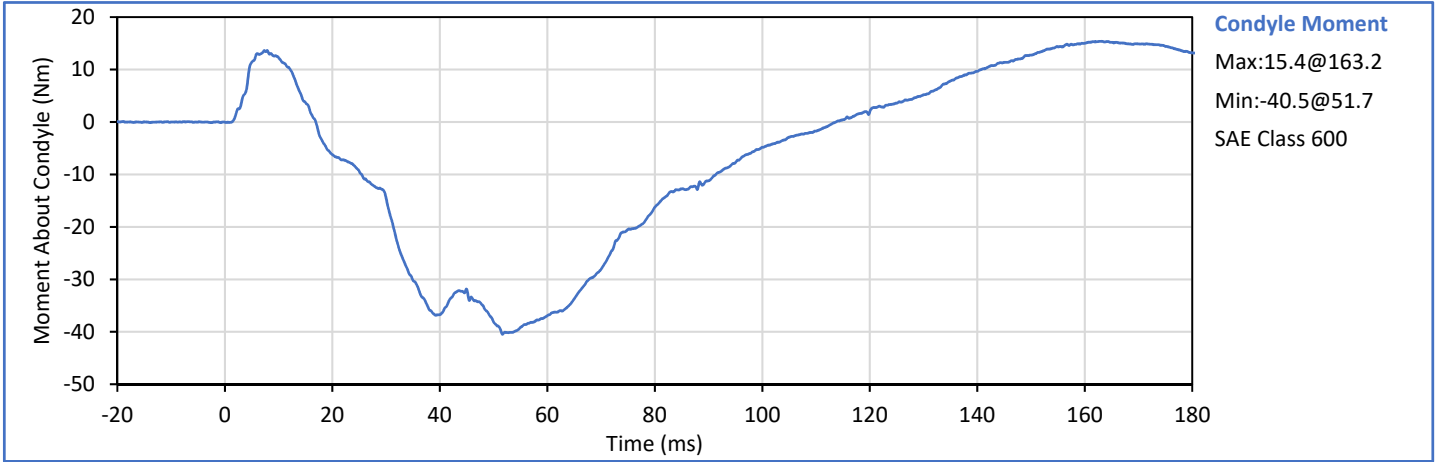


Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	34	Pass
Pendulum Velocity	m/s	5.51	5.63	5.52	Pass
Pendulum Decel at 10 ms	m/s	2.20	2.80	2.61	Pass
Pendulum Decel at 15 ms	m/s	3.30	4.10	3.82	Pass
Pendulum Decel at 20 ms	m/s	4.40	5.40	5.18	Pass
Pendulum Decel at 25 ms	m/s	5.40	6.10	5.78	Pass
Pendulum Decel from 25-100 ms	m/s	5.50	6.20	5.80	Pass
Peak "D" Plane Rotation	deg	71.0	81.0	74.6	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	61.6	Pass
Peak Occ. Condyle Moment	Nm	-44.0	-36.0	-40.5	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	113.7	Pass
<b>Overall Test Results</b>					<b>Pass</b>

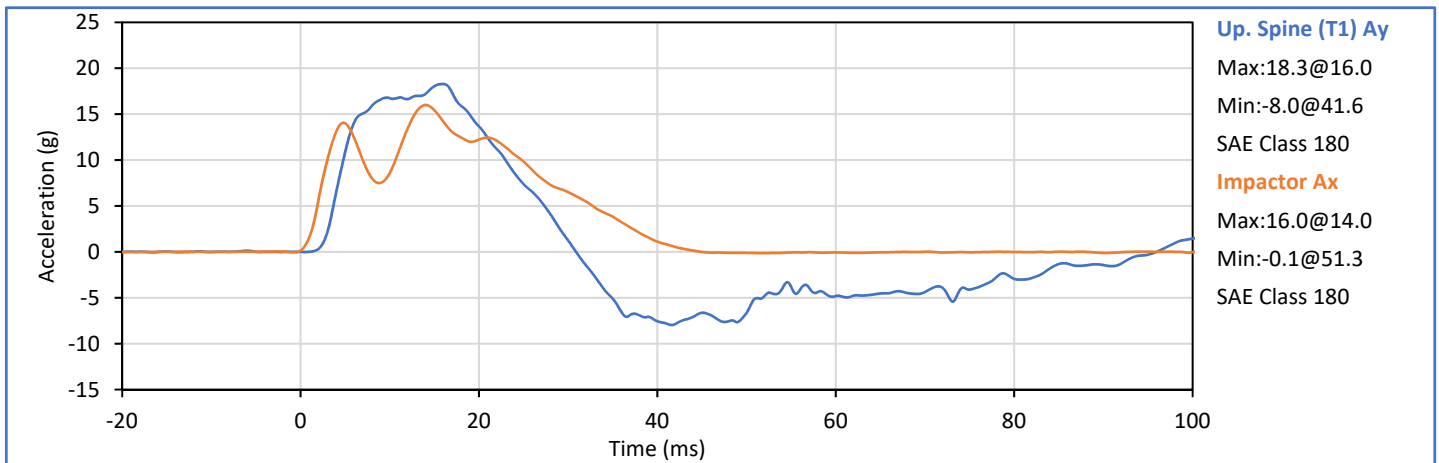
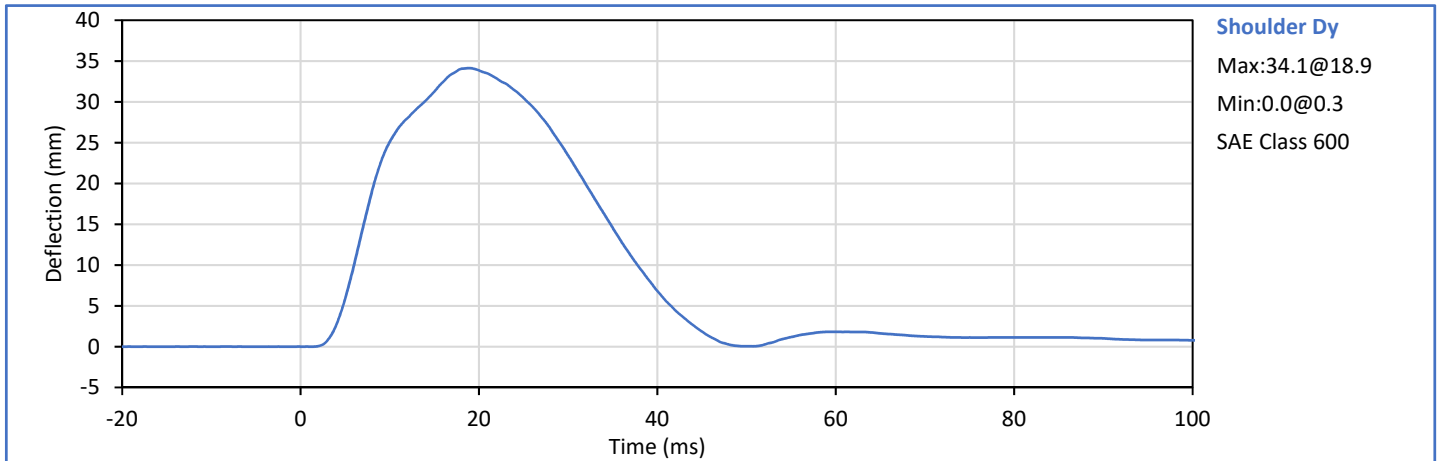


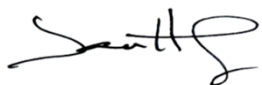
Technician: *J. Hernandez*  
J. Hernandez


Approved By: *P. Puzzuto*  
P. Puzzuto



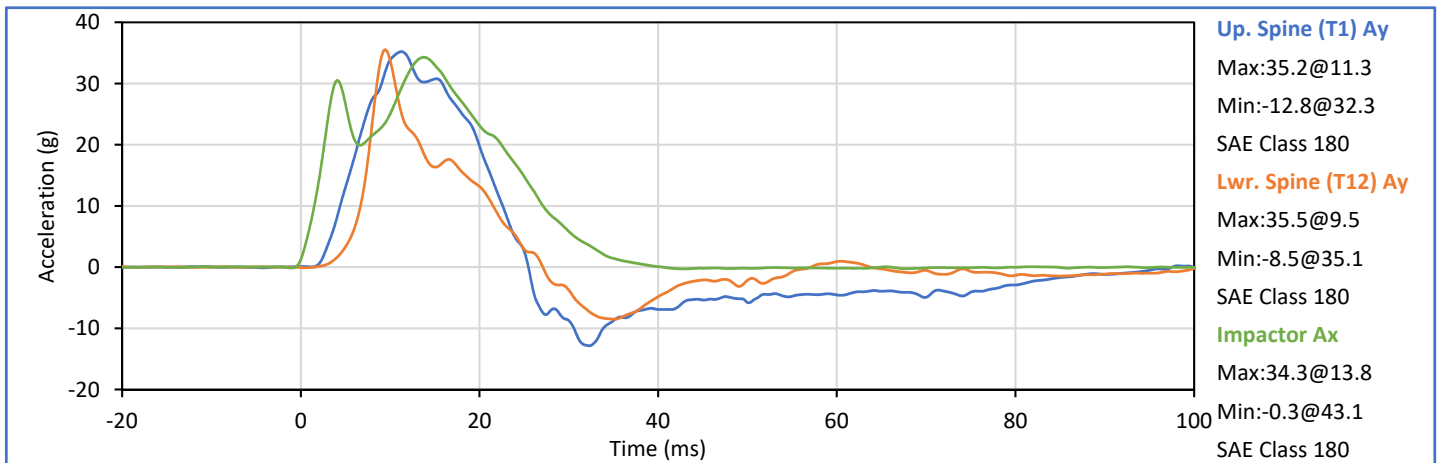
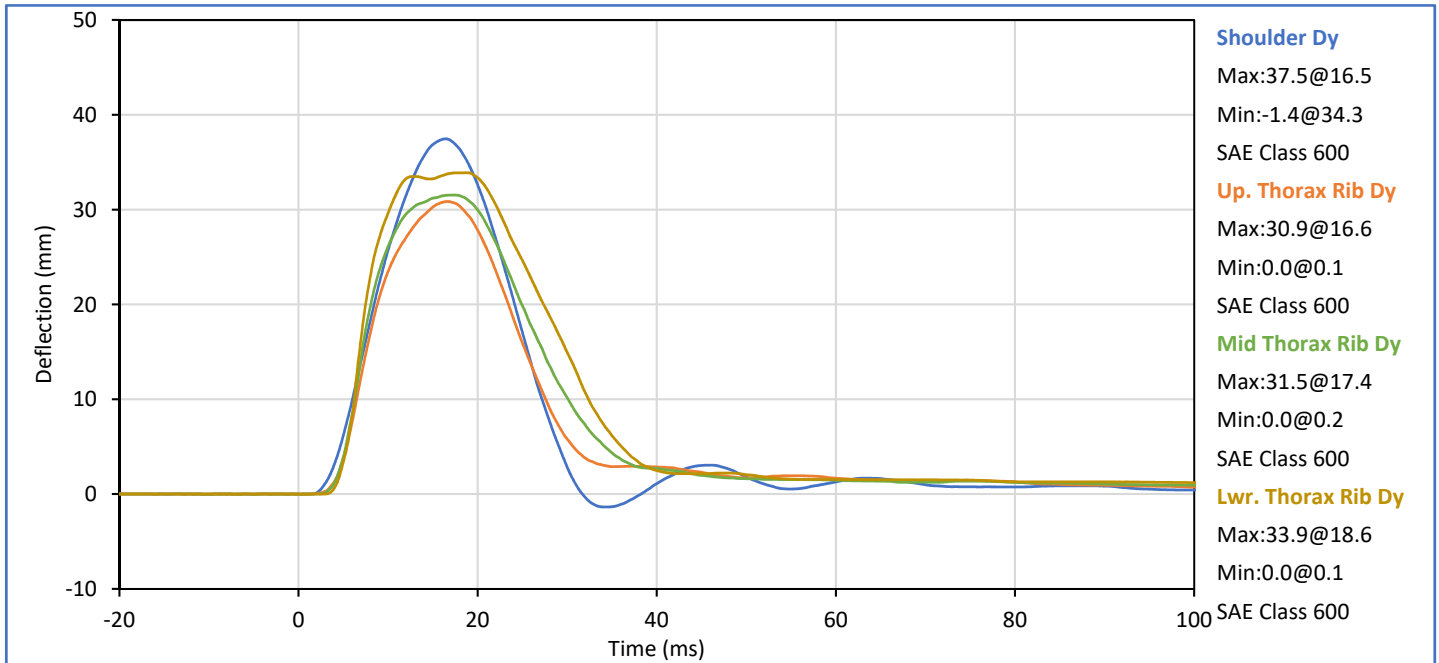
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.28	Pass
Peak Shoulder Dy	mm	28.0	37.0	34.1	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.3	Pass
Peak Impactor Ax	g	13.0	18.0	16.0	Pass
Overall Test Results					Pass

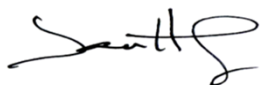



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

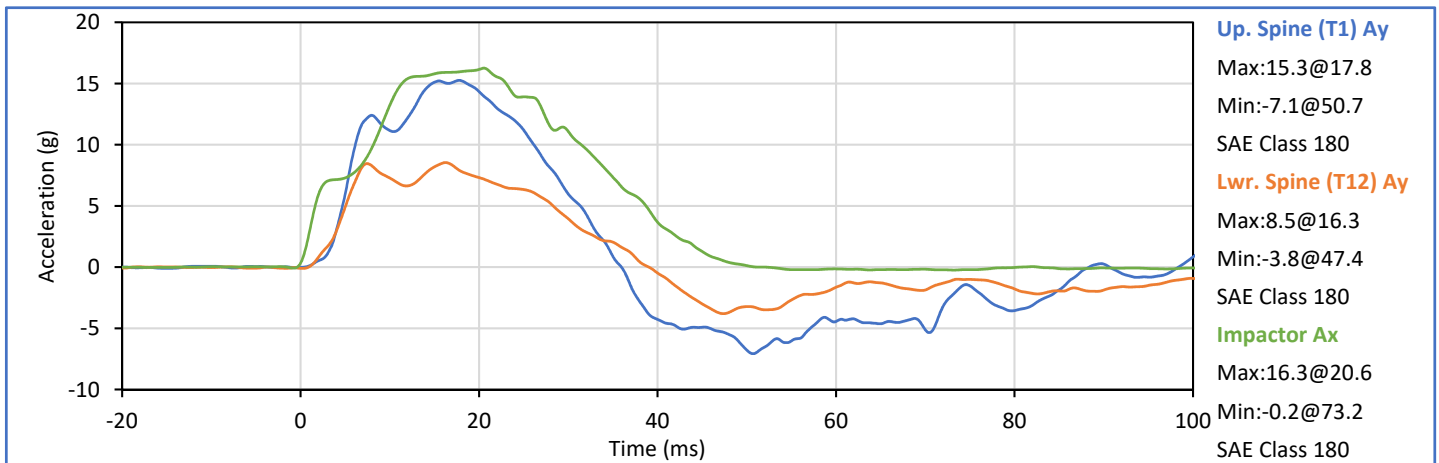
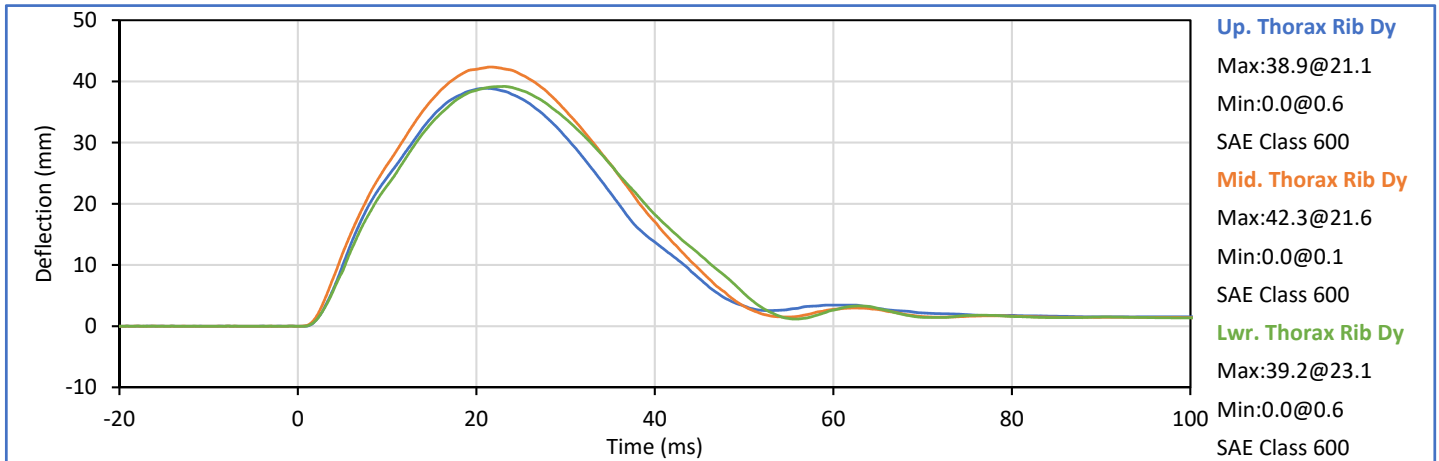
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Humidity	%	10	70	42	Pass
Impactor Velocity	m/s	6.60	6.80	6.64	Pass
Peak Shoulder Dy	mm	31.0	40.0	37.5	Pass
Peak Upper Rib Dy	mm	25.0	32.0	30.9	Pass
Peak Middle Rib Dy	mm	30.0	36.0	31.5	Pass
Peak Lower Rib Dy	mm	32.0	38.0	33.9	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	35.2	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	35.5	Pass
Peak Impactor Ax	g	30.0	36.0	34.3	Pass
<b>Overall Test Results</b>					<b>Pass</b>

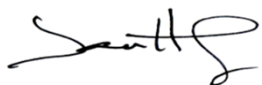



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

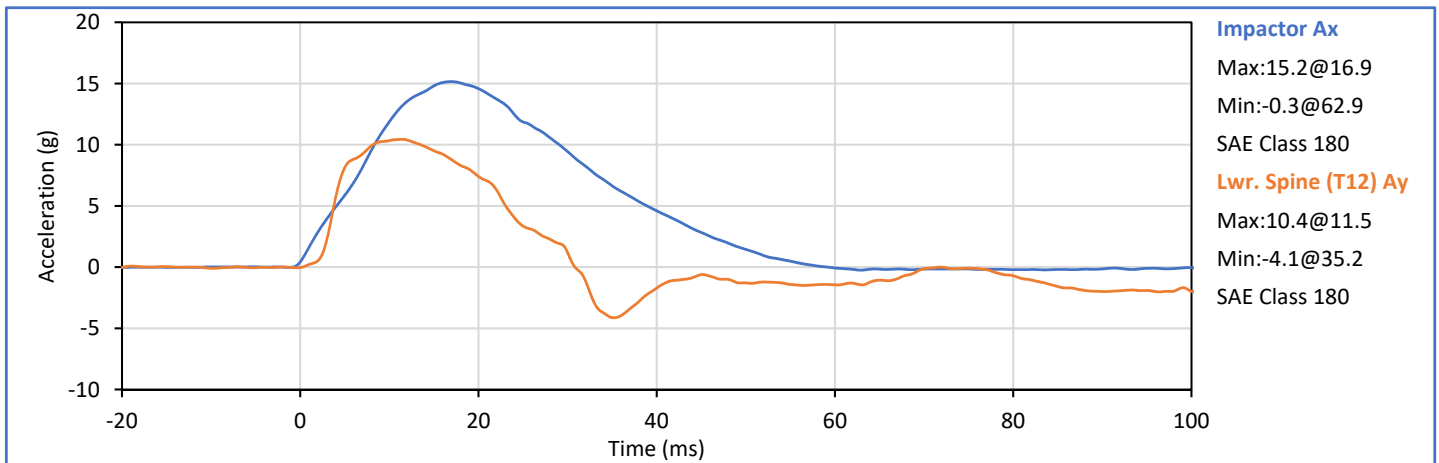
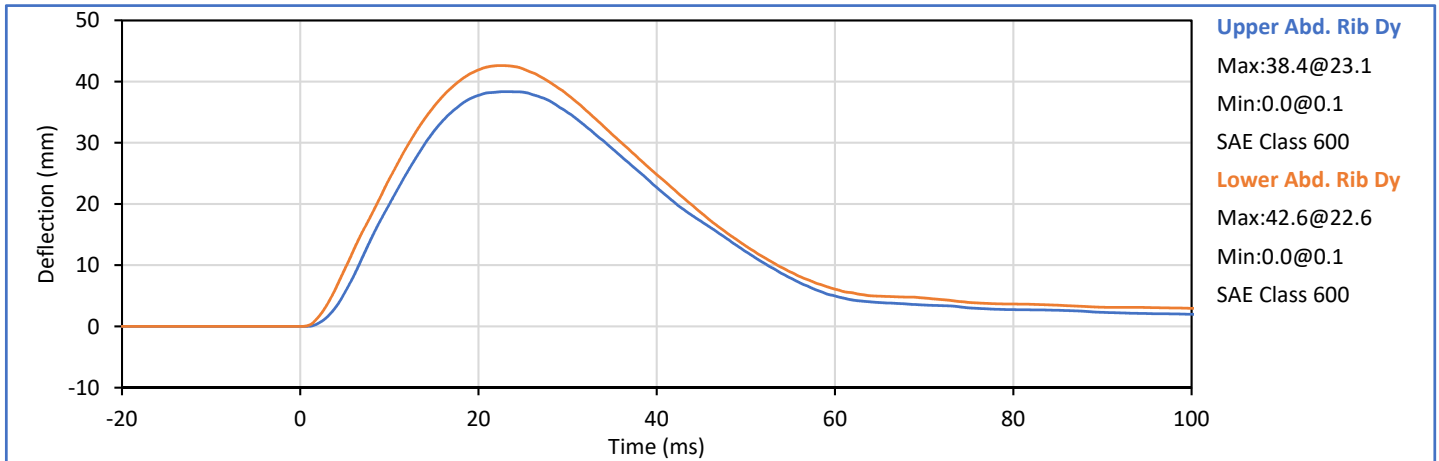
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.27	Pass
Peak Upper Rib Dy	mm	32.0	40.0	38.9	Pass
Peak Middle Rib Dy	mm	39.0	45.0	42.3	Pass
Peak Lower Rib Dy	mm	35.0	43.0	39.2	Pass
Peak Upper Spine (T1) Ay	g	13.0	17.0	15.3	Pass
Peak Lower Spine (T12) Ay	g	7.0	11.0	8.5	Pass
Peak Impactor Ax	g	14.0	18.0	16.3	Pass
Overall Test Results					Pass

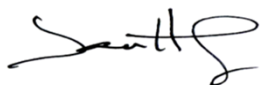



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	38.4	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	42.6	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.4	Pass
Peak Impactor Ax	g	12.0	16.0	15.2	Pass
<b>Overall Test Results</b>					<b>Pass</b>

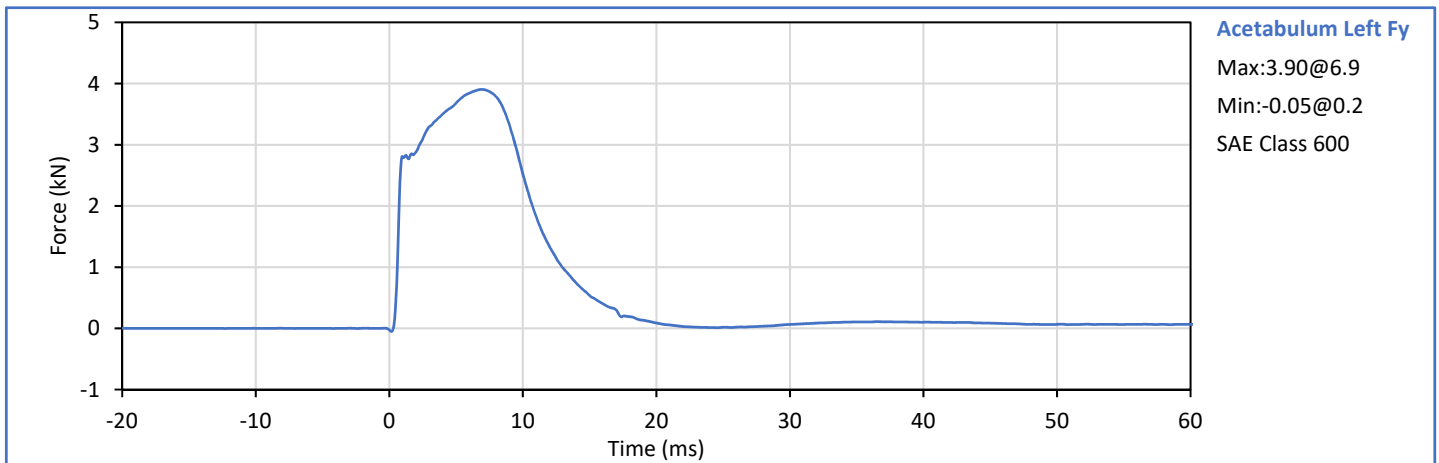
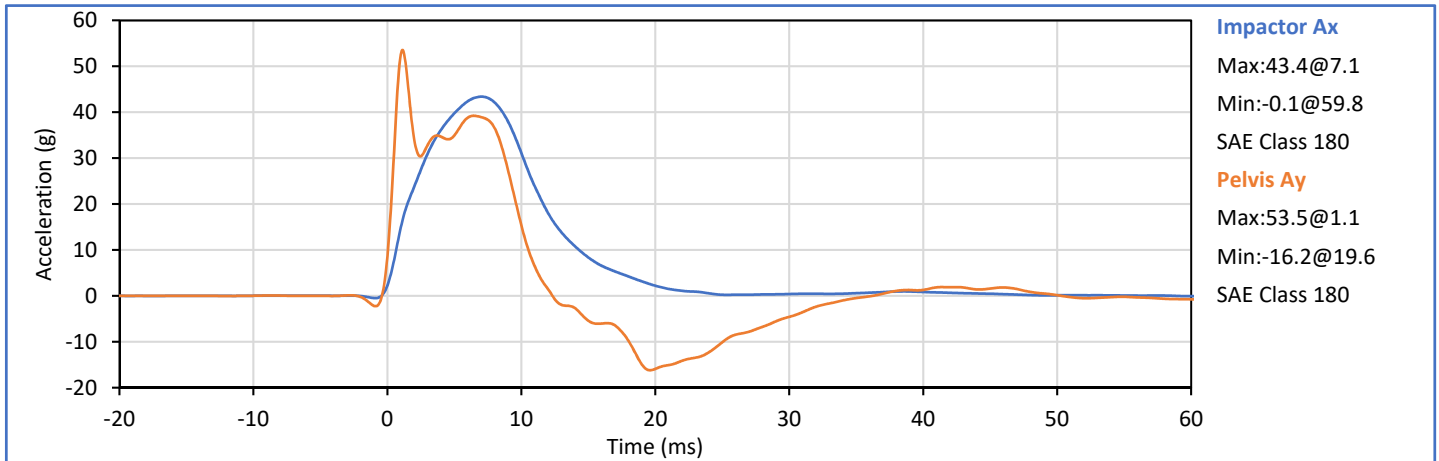


Technician:   
J. Hernandez


Approved By:   
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	23	Pass
Impactor Velocity	m/s	6.60	6.80	6.77	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.90	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.2	Pass
Peak Impactor Ax	g	38.0	47.0	43.4	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 11464 (SACO)



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto



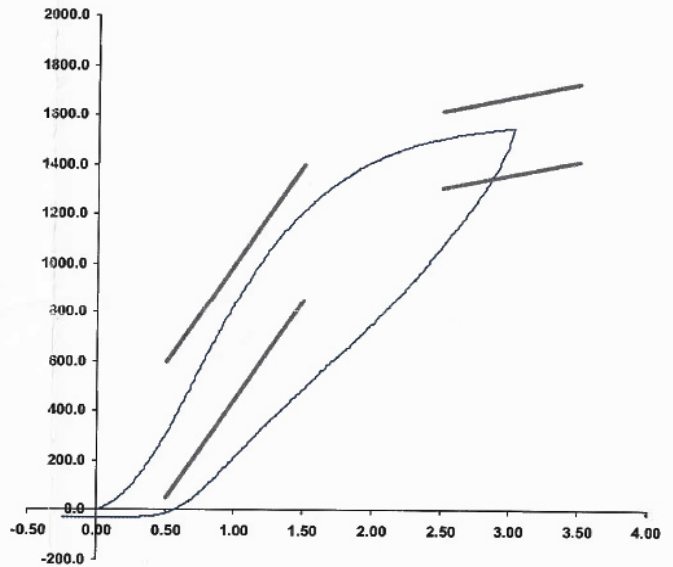
**SID-IIs Pelvis Plug Certification Test**

Plug S/N 11464  
Test Number 2953  
Report Number 2950  
Test Date 8/30/2016 11:24:57 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	318.37	50.00	600.00
Force @ 1.5 mm (N)	1,213.78	850.00	1,400.00
Force @ 2.5 mm (N)	1,506.12	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,546.72	1,361.00	1,673.00

Testing Machine STM-20 5965542  
Load Cell S/N (TI240813), Units (LBS) 1000  
Crosshead Speed (mm / min) or Rate 12.7  
Extension or Position Measured by XHD\_100 (XHD100)  
Notes:

Force (-N) vs Extension (-mm)



Operator DC  
Part Number 180-4450  
Template No 107 30-Aug-16  
SACO Research

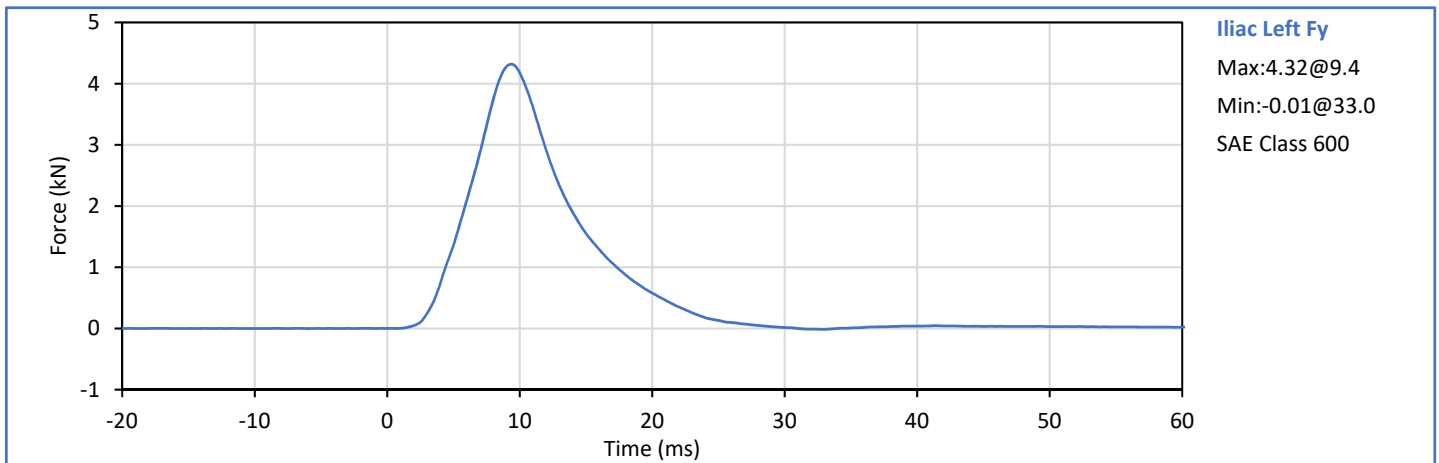
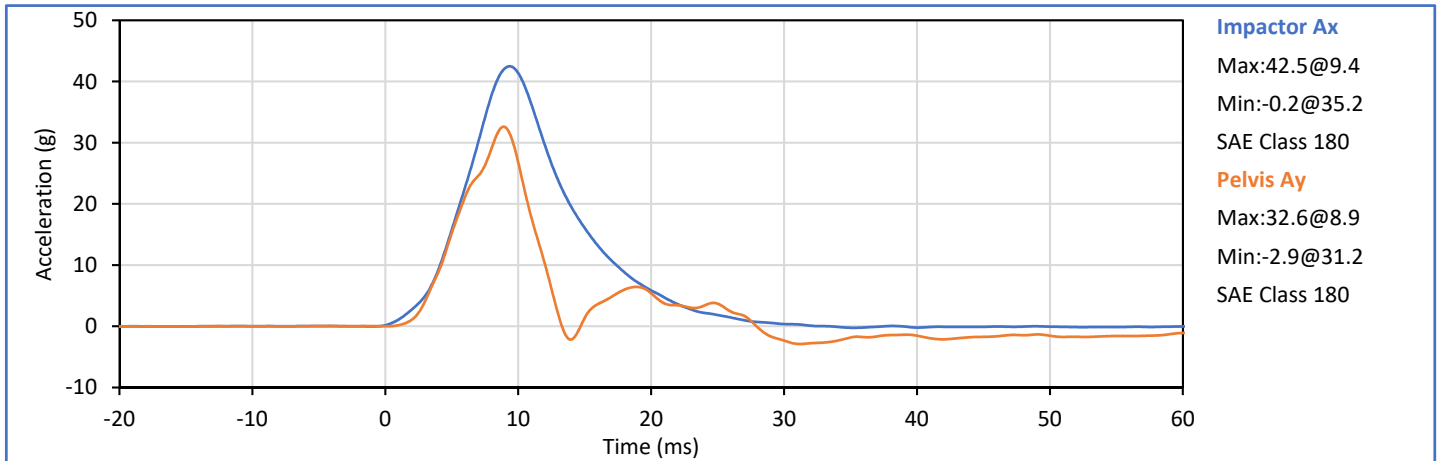
By: DC Date: 8/30/16

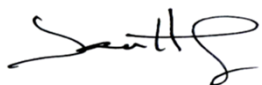



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Iliac Fy	kN	4.10	5.10	4.32	Pass
Pelvis Ay after 6ms	g	28.0	39.0	32.6	Pass
Peak Impactor Ax	g	36.0	45.0	42.5	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 12228 (SACO) \*

\* Plug is not impacted and remains certified



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

**APPENDIX C**  
**Post-Test ATD Configuration And Performance Verification Data**  
**SID-IIs Small Side Impact ATD**  
**S/N: 299**

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	44	Pass
A - Sitting Height	mm	772	788	782	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	83	Pass
D - H Point From Seatback	mm	141	151	149	Pass
E - Shoulder Pivot From Backline	mm	97	107	105	Pass
F - Thigh Clearance	mm	119	135	126	Pass
G - Head Breadth	mm	140	148	143	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	186	Pass
J - Head Circumference	mm	541	551	547	Pass
K - Buttock To Knee Length	mm	514	540	524	Pass
L - Popliteal Height	mm	343	369	350	Pass
K - Knee Pivot To Floor Height	mm	392	409	398	Pass
N - Buttock Popliteal Length	mm	416	442	437	Pass
O - Chest Depth W/O Jacket	mm	195	211	207	Pass
P - Foot Length	mm	216	232	221	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	256	Pass
S - Knee Joint To Seatback	mm	477	493	486	Pass
V - Shoulder Width	mm	341	357	345	Pass
W - Foot Width	mm	78	94	84	Pass
Y - Chest Circumference W/Jacket	mm	851	881	862	Pass
Z - Waist Circumference	mm	761	791	779	Pass
Overall Test Results					Pass

Technician:



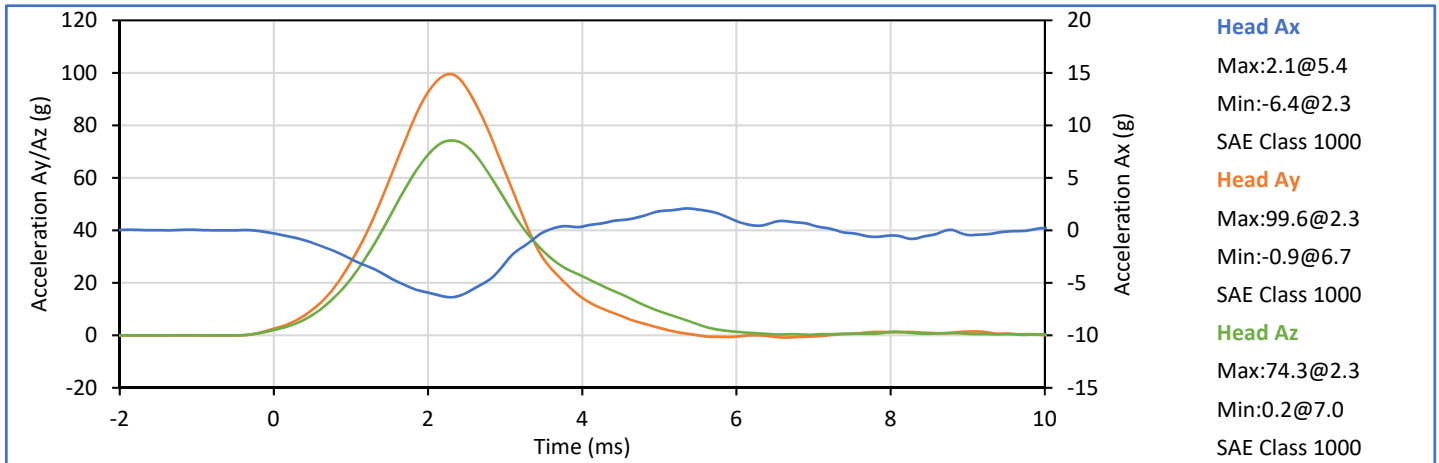
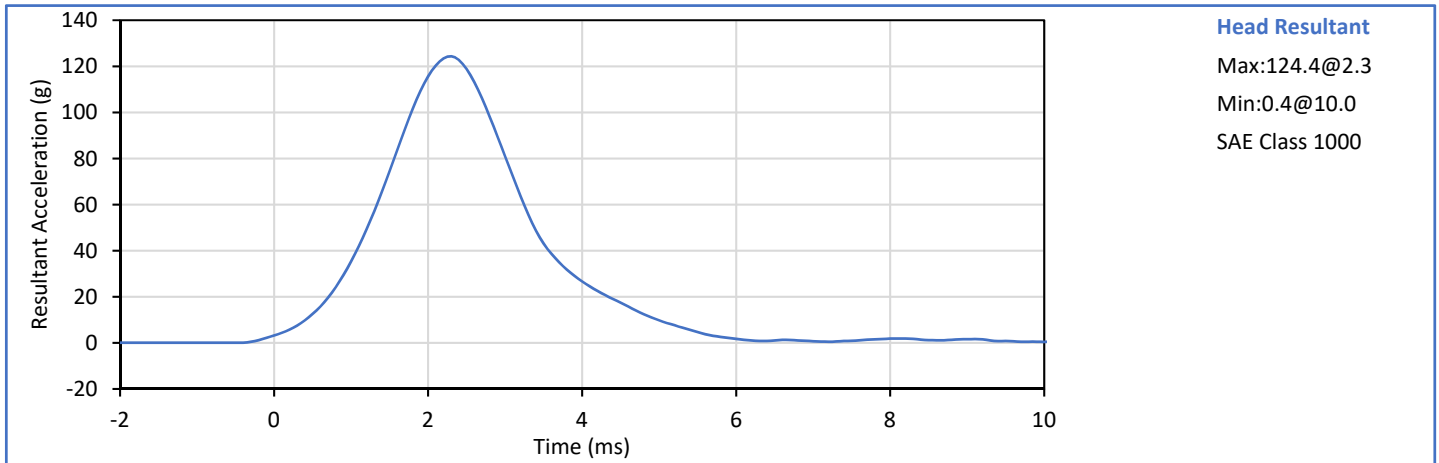
J. Hernandez

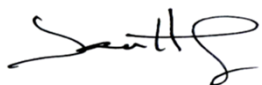
Approved By:




P. Puzzuto

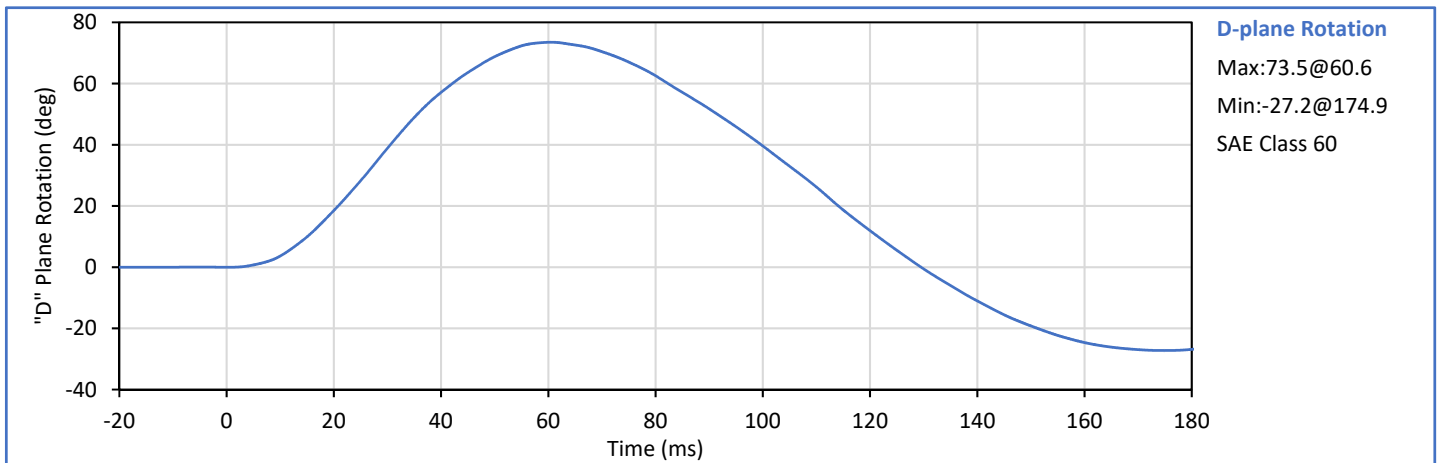
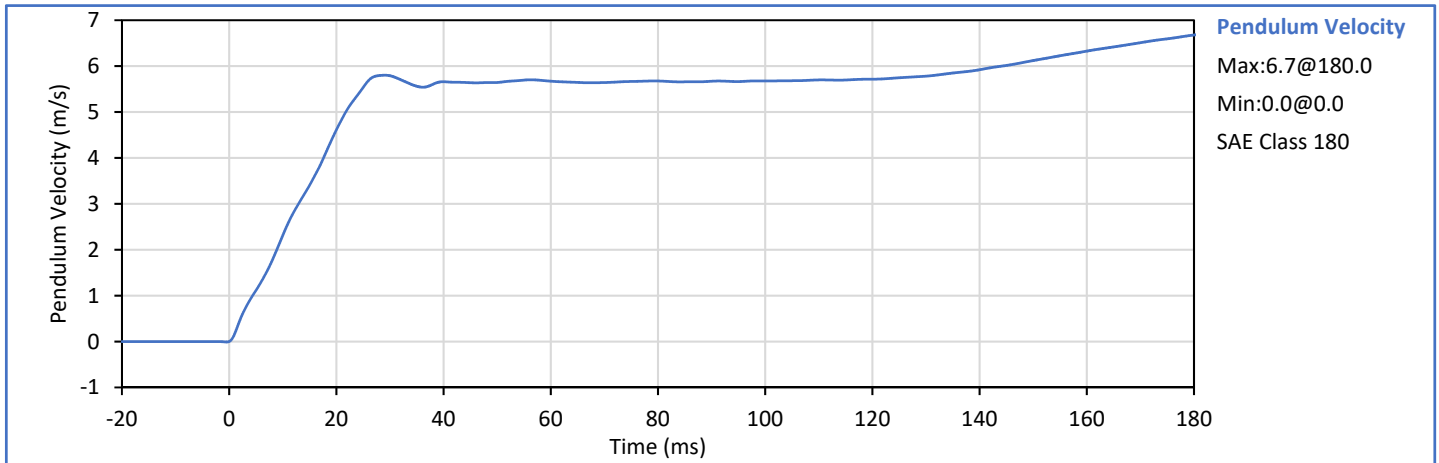
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.2	Pass
Laboratory Humidity	%	10	70	28	Pass
Peak Resultant Acceleration	g	115.0	137.0	124.4	Pass
Peak Head Ax	g	-15.0	15.0	-6.4	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
Overall Test Results					Pass

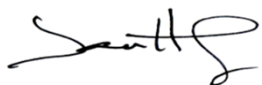



Technician:   
J. Hernandez

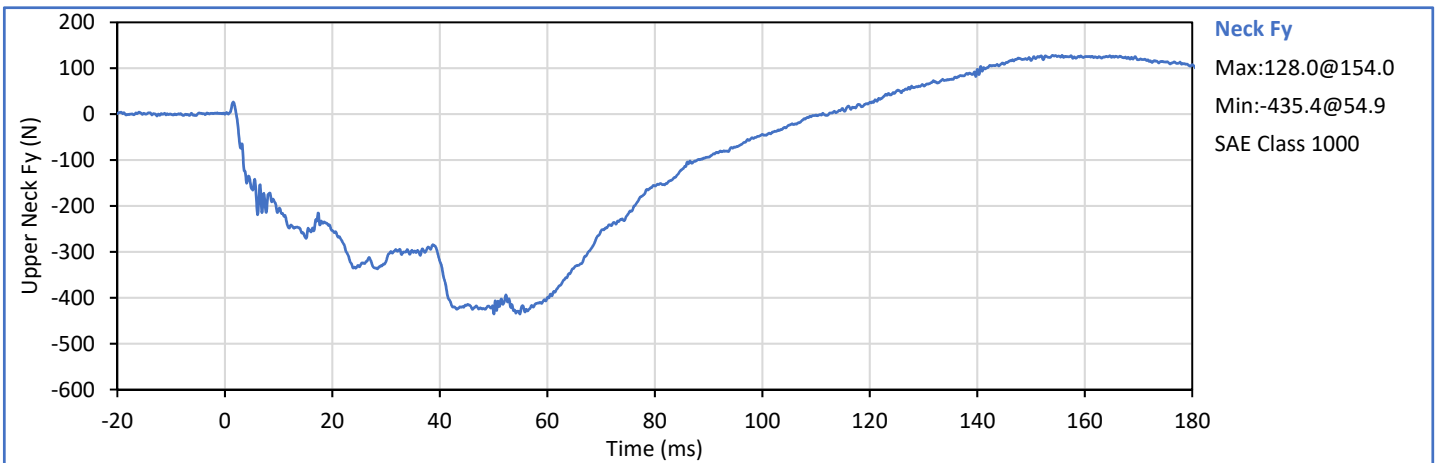
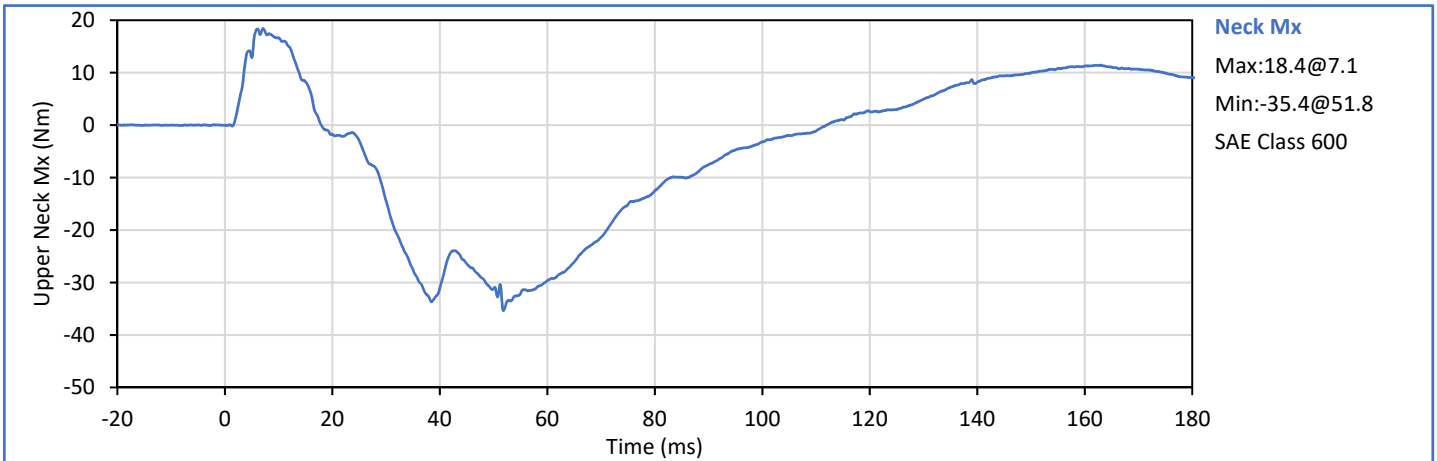
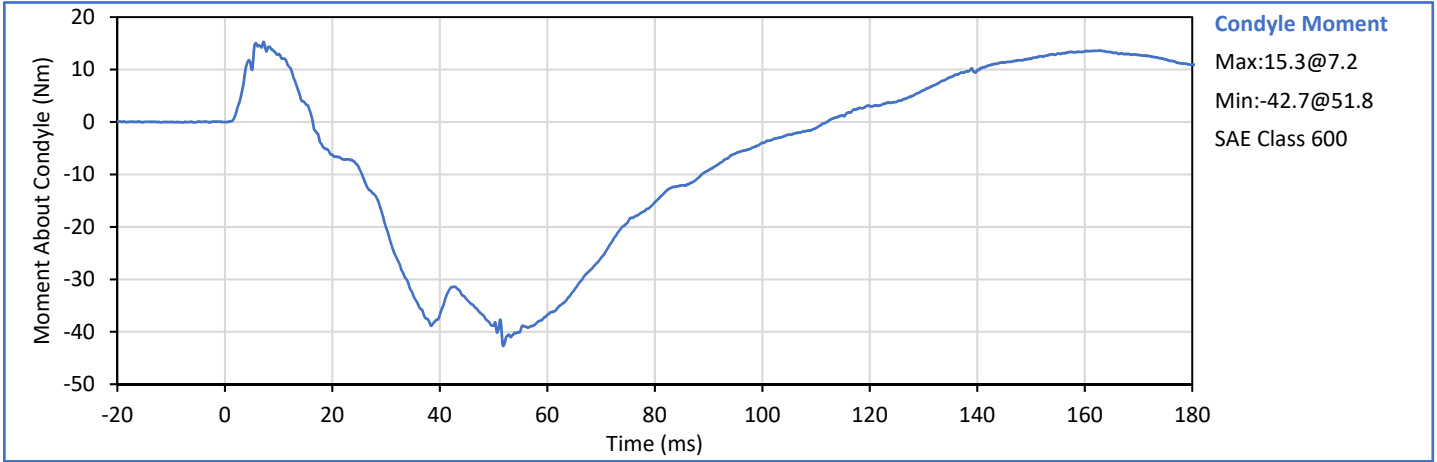
Approved By:   
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	5.51	5.63	5.61	Pass
Pendulum Decel at 10 ms	m/s	2.20	2.80	2.31	Pass
Pendulum Decel at 15 ms	m/s	3.30	4.10	3.40	Pass
Pendulum Decel at 20 ms	m/s	4.40	5.40	4.61	Pass
Pendulum Decel at 25 ms	m/s	5.40	6.10	5.54	Pass
Pendulum Decel from 25-100 ms	m/s	5.50	6.20	5.80	Pass
Peak "D" Plane Rotation	deg	71.0	81.0	73.5	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	60.6	Pass
Peak Occ. Condyle Moment	Nm	-44.0	-36.0	-42.7	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	112.0	Pass
<b>Overall Test Results</b>					<b>Pass</b>

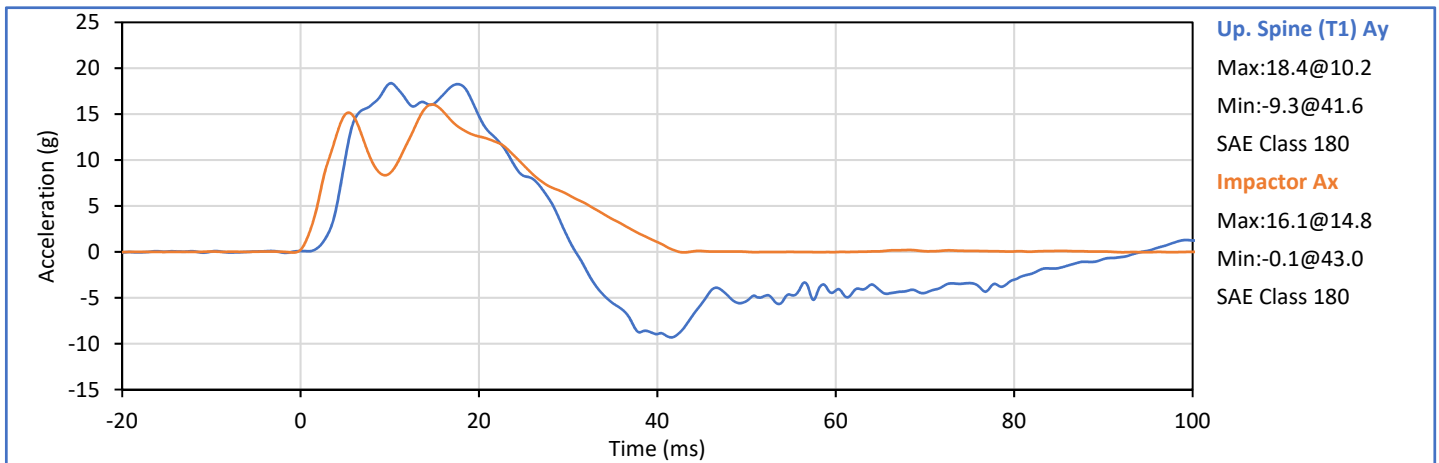
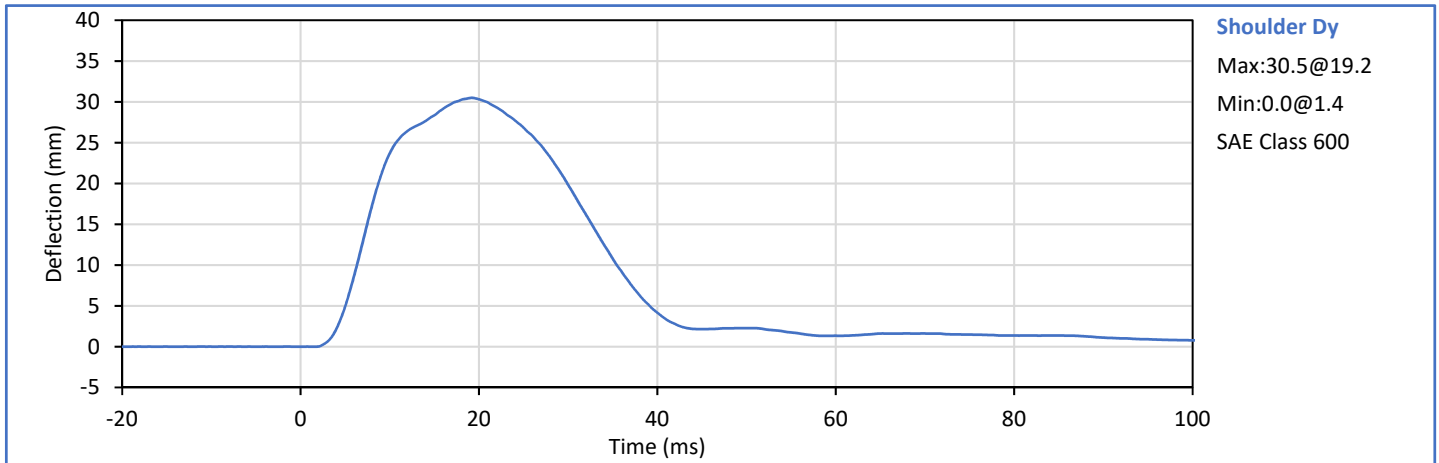


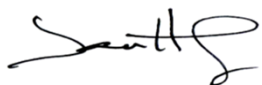
Technician:   
J. Hernandez


Approved By:   
P. Puzzuto



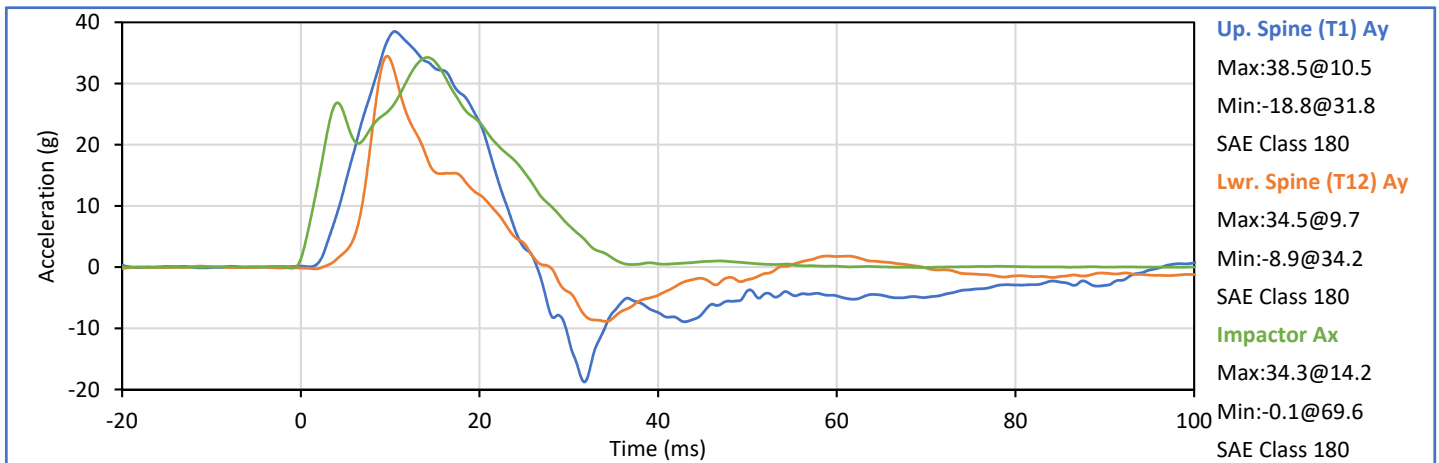
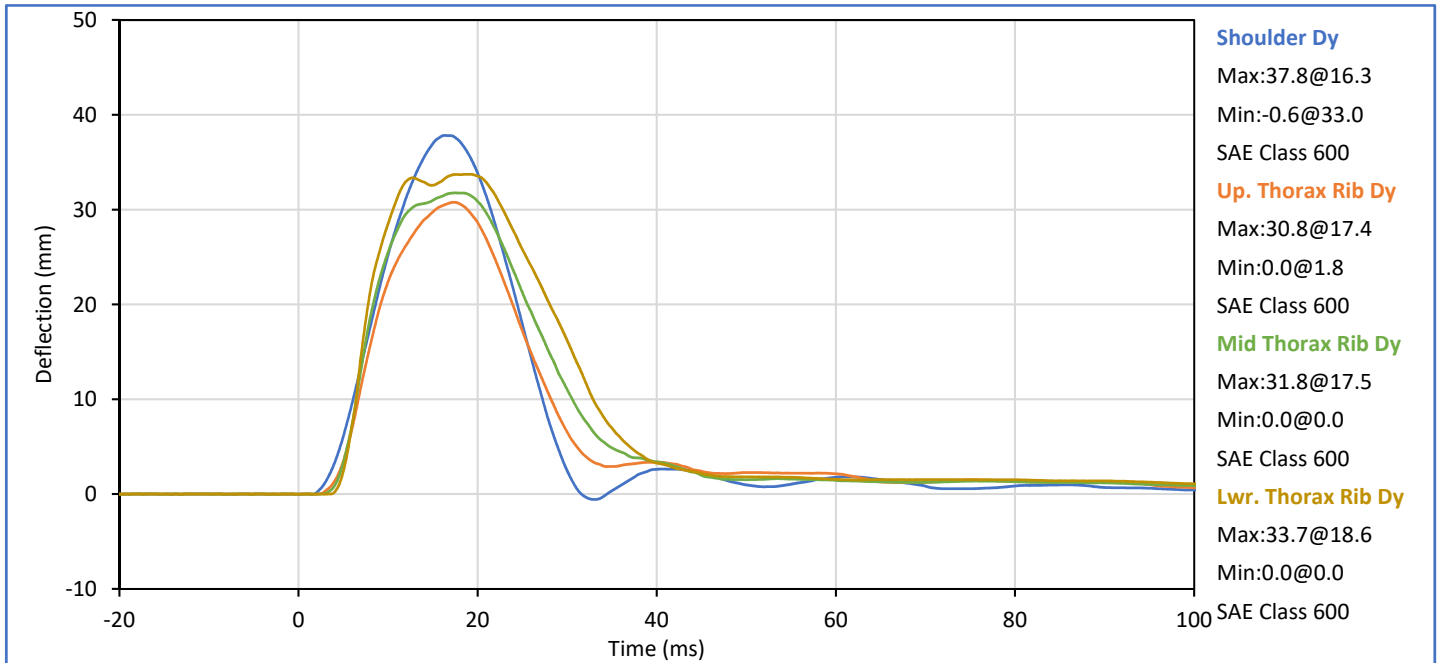
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Shoulder Dy	mm	28.0	37.0	30.5	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.4	Pass
Peak Impactor Ax	g	13.0	18.0	16.1	Pass
Overall Test Results					Pass

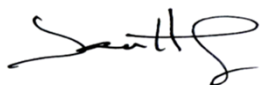



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	6.60	6.80	6.67	Pass
Peak Shoulder Dy	mm	31.0	40.0	37.8	Pass
Peak Upper Rib Dy	mm	25.0	32.0	30.8	Pass
Peak Middle Rib Dy	mm	30.0	36.0	31.8	Pass
Peak Lower Rib Dy	mm	32.0	38.0	33.7	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	38.5	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	34.5	Pass
Peak Impactor Ax	g	30.0	36.0	34.3	Pass
<b>Overall Test Results</b>					<b>Pass</b>

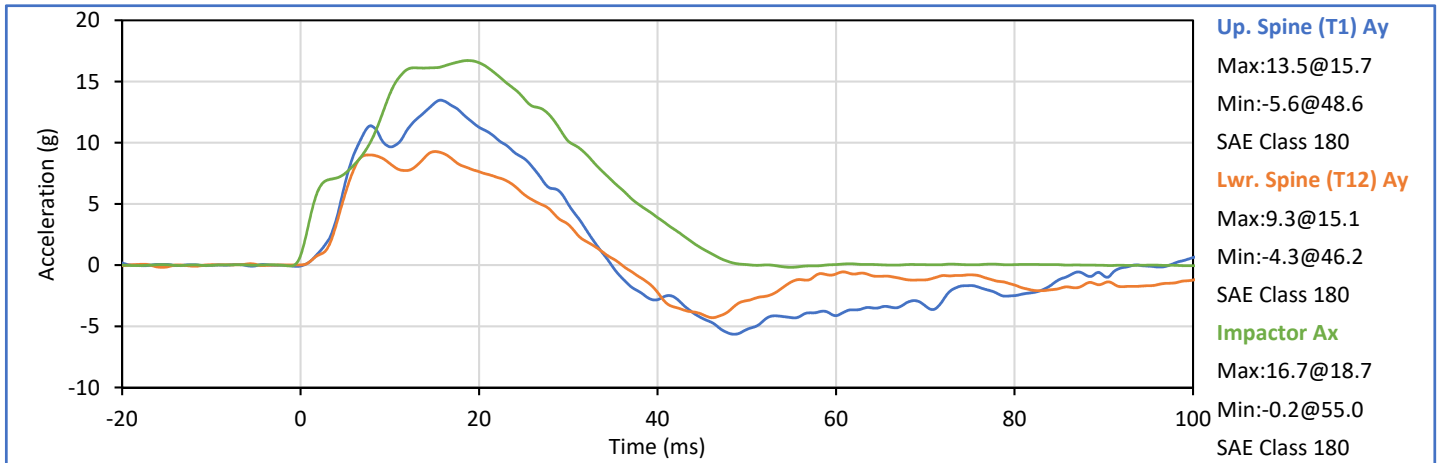
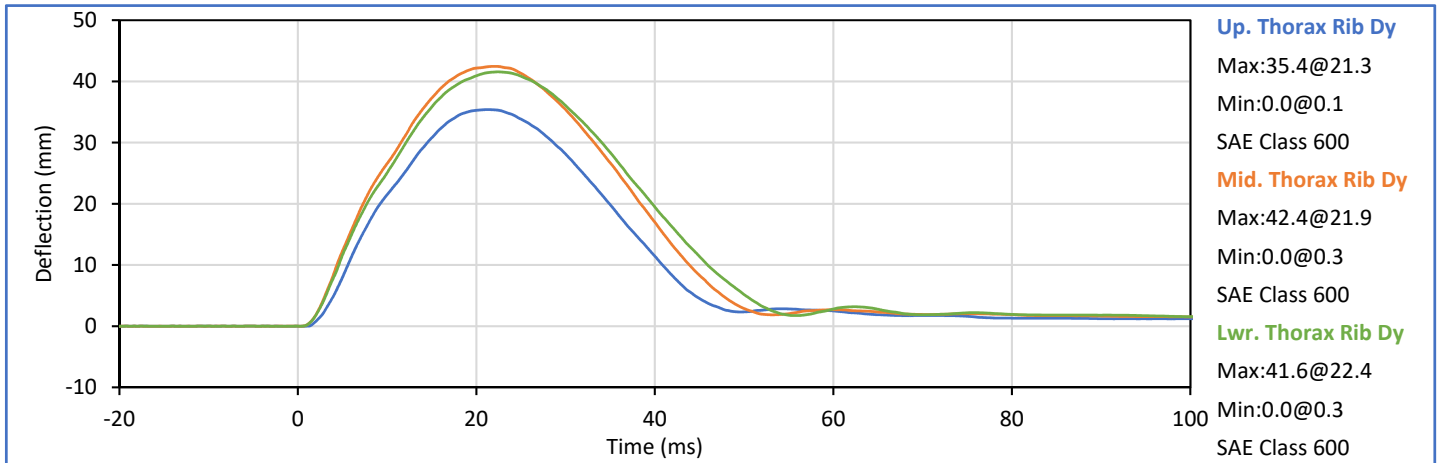


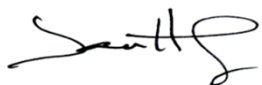
Technician:   
J. Hernandez


Approved By:   
P. Puzzuto



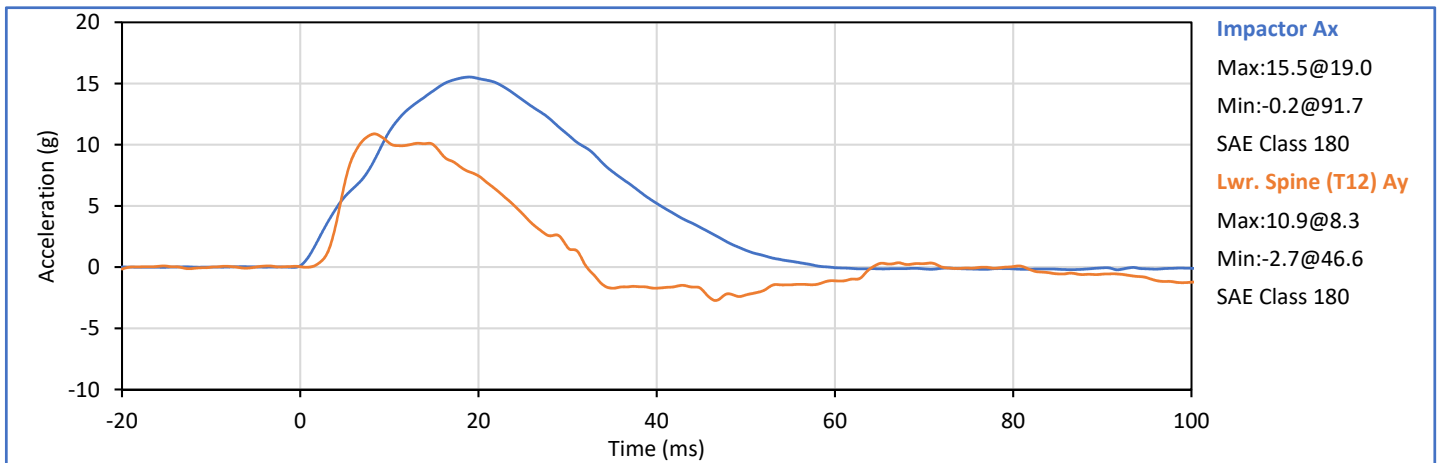
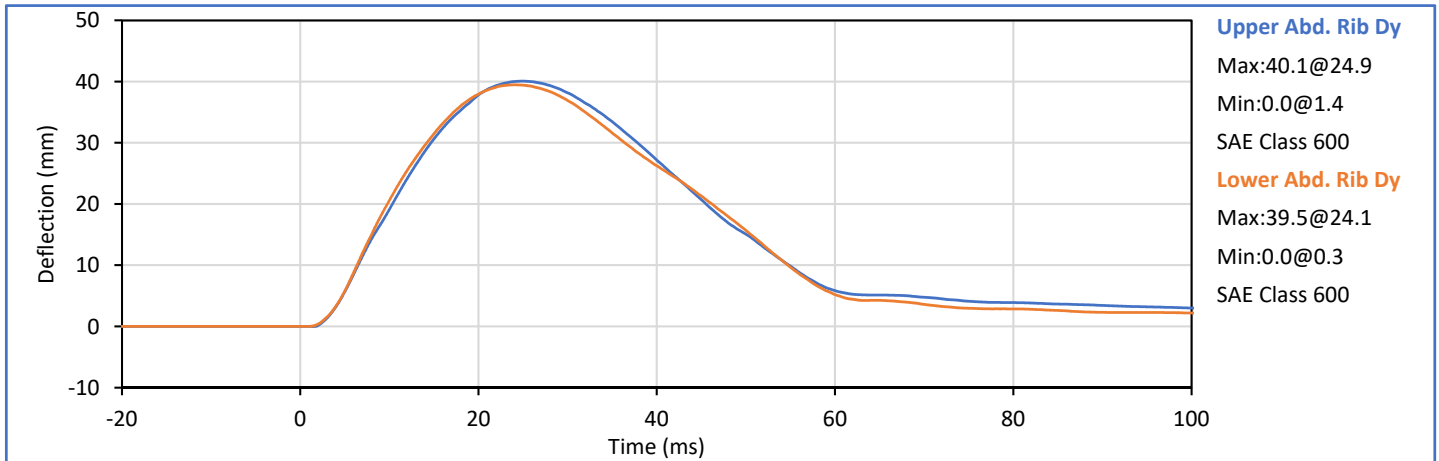
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Upper Rib Dy	mm	32.0	40.0	35.4	Pass
Peak Middle Rib Dy	mm	39.0	45.0	42.4	Pass
Peak Lower Rib Dy	mm	35.0	43.0	41.6	Pass
Peak Upper Spine (T1) Ay	g	13.0	17.0	13.5	Pass
Peak Lower Spine (T12) Ay	g	7.0	11.0	9.3	Pass
Peak Impactor Ax	g	14.0	18.0	16.7	Pass
Overall Test Results					Pass

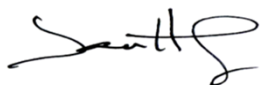



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Humidity	%	10	70	40	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	40.1	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	39.5	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.9	Pass
Peak Impactor Ax	g	12.0	16.0	15.5	Pass
<b>Overall Test Results</b>					<b>Pass</b>

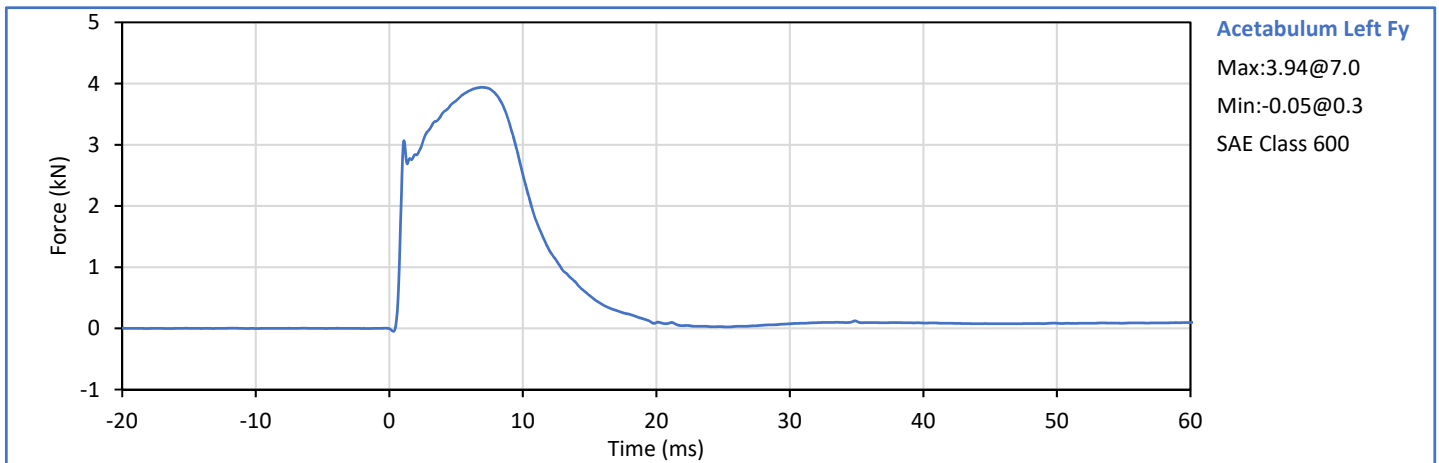
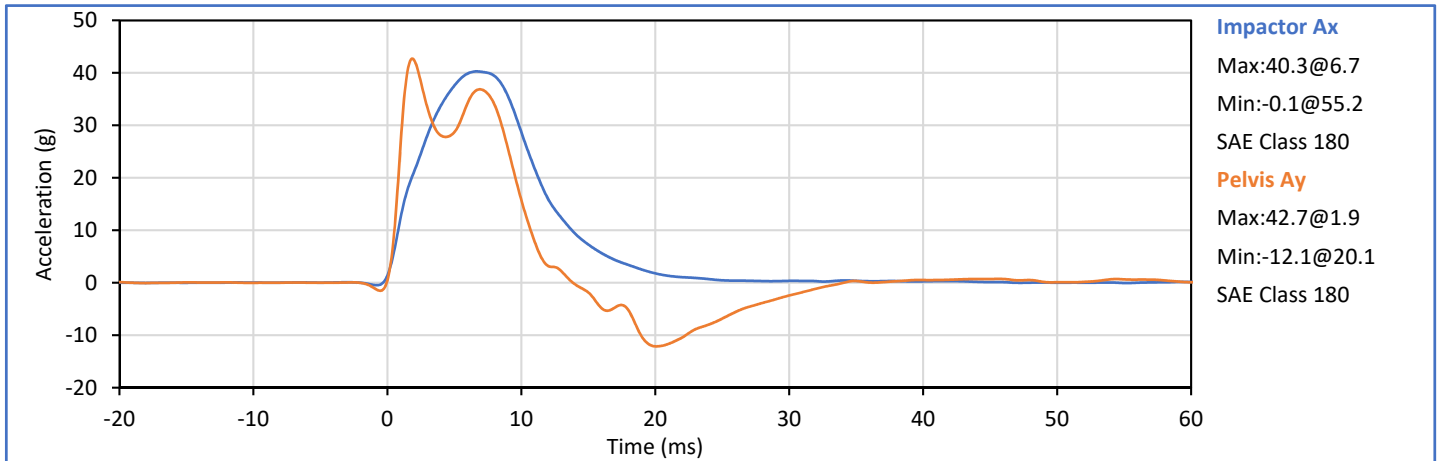


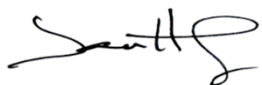
Technician:   
J. Hernandez


Approved By:   
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	42	Pass
Impactor Velocity	m/s	6.60	6.80	6.79	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.94	Pass
Pelvis Ay after 6ms	g	34.0	42.0	36.9	Pass
Peak Impactor Ax	g	38.0	47.0	40.3	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 11507 (SACO)



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto



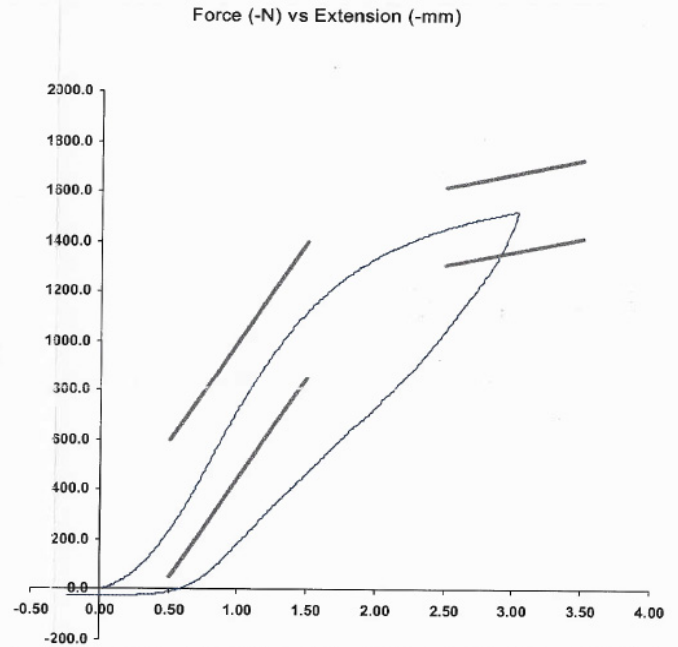
**SID-IIs Pelvis Plug Certification Test**

Plug S/N 11507  
Test Number 3011  
Report Number 3008  
Test Date 8/31/2016 10:53:00 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	235.77	50.00	600.00
Force @ 1.5 mm (N)	1,119.63	850.00	1,400.00
Force @ 2.5 mm (N)	1,452.98	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,518.61	1,361.00	1,673.00

Testing Machine STM-20 5965542  
Load Cell S/N (TI240813), Units (LBS) 1000  
Crosshead Speed ( mm / min ) or Rate 12.7  
Extension or Position Measured by XHD\_100 (XHD100)

Notes:



Operator DC

Part Number 180-4450

Template No 107 31-Aug-16  
SACO Research

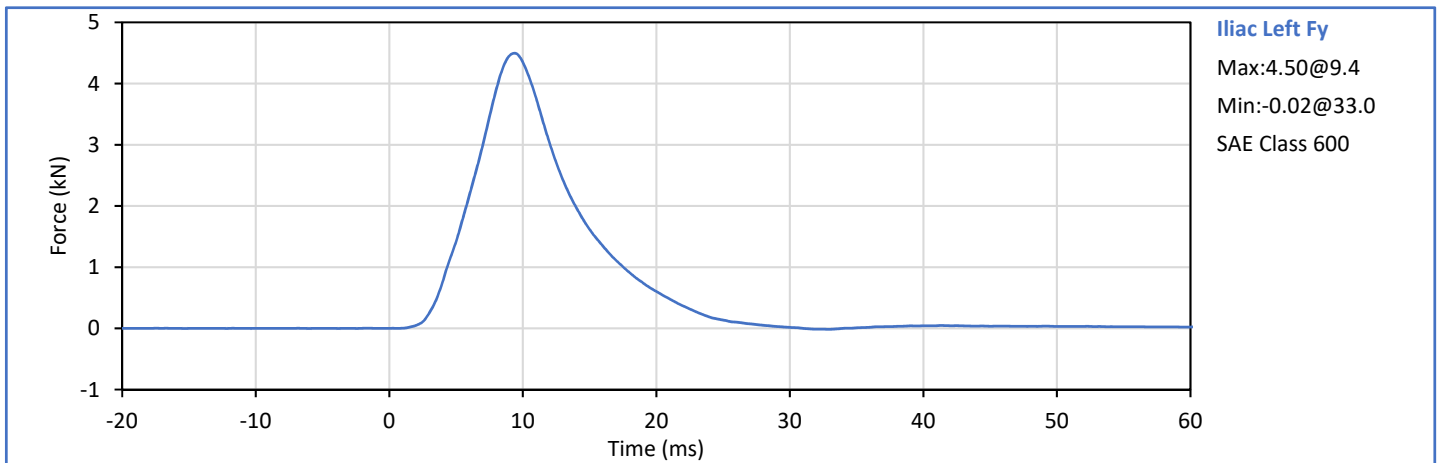
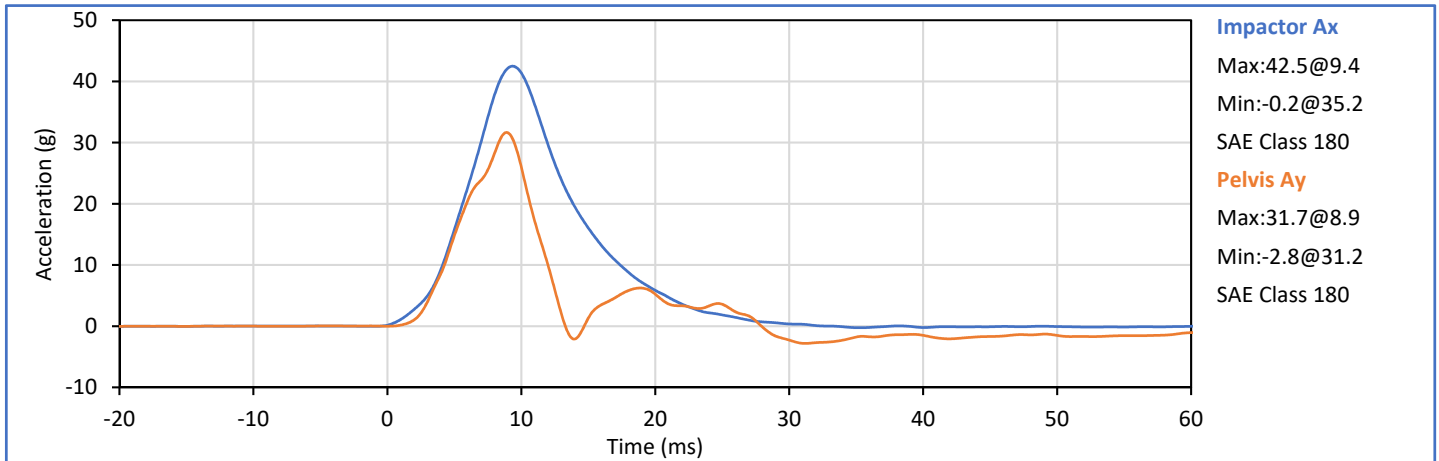
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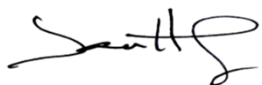
SACO Research 41735 Elm St, #401 Murrieta, CA 92562 Tel 310-694-2082 FAX


Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Iliac Fy	kN	4.10	5.10	4.50	Pass
Pelvis Ay after 6ms	g	28.0	39.0	31.7	Pass
Peak Impactor Ax	g	36.0	45.0	42.5	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 12228 (SACO) \*

\* Plug is not impacted and remains certified



Technician:   
J. Hernandez

Approved By:   
P. Puzzuto

**APPENDIX D**  
**TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA**

Position: Driver  
 ATD Type: SID-IIs  
 ATD S\N: 299

**Table 1a - Driver ATD Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Head Acceleration X Primary	P51929	Endevco	7264C-2k	2019-08-08
Head Acceleration Y Primary	P50086	Endevco	7264C-2k	2019-08-08
Head Acceleration Z Primary	P51931	Endevco	7264C-2k	2019-08-08
Head Acceleration X Redundant	P68604	Endevco	7264C-2k	2019-08-08
Head Acceleration Y Redundant	P51934	Endevco	7264C-2k	2019-08-08
Head Acceleration Z Redundant	P58736	Endevco	7264C-2k	2019-08-08
Upper Thorax Rib Deflection Y	1143	Servo	08TCI-3725	2019-08-15
Middle Thorax Rib Deflection Y	1160	Servo	08TCI-3725	2019-08-15
Lower Thorax Rib Deflection Y	1213	Servo	08TCI-3725	2019-08-15
Upper Abdomen Rib Deflection Y	1218	Servo	08TCI-3725	2019-08-15
Lower Abdomen Rib Deflection Y	1177	Servo	08TCI-3725	2019-08-15
Lower Spine T12 Acceleration X	04I20-Z04	Entran	EGEB6Q-2k	2019-08-16
Lower Spine T12 Acceleration Y	06A07-R08	Entran	EGEB6Q-2k	2019-08-16
Lower Spine T12 Acceleration Z	P58795	Endevco	7264C-2k	2019-08-16
Iliac Wing Impact Side Force Y	289 Fy (Iliac)	R.A. Denton	3228J	2019-10-11
Acetabulum Impact Side Force Y	277 Fy (Acetabulum)	R.A. Denton	3249J	2019-10-11

**Table 1b - Driver ATD Optional Instrumentation (Research Data Only)**

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Head Rotation Rate X	ARS15063	DTS	ARS PRO-8k (2000Hz)	2019-09-06
Head Rotation Rate Y	ARS15064	DTS	ARS PRO-8k (2000Hz)	2019-09-06
Head Rotation Rate Z	ARS15065	DTS	ARS PRO-8k (2000Hz)	2019-09-06

**Table 2 - Vehicle Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Vehicle CG Ax	A254900	MSI	52F-2000	2019-06-19
Vehicle CG Ay	A254917	MSI	52F-2000	2019-06-19
Vehicle CG Az	A254903	MSI	52F-2000	2019-06-19
Left Floor Sill Ay	A227260	MSI	52F-2000	2019-09-17
A-Pillar Sill Ay	10103	Endevco	757F-2k	2020-01-28
A-Pillar Low Ay	10250	Endevco	757F-2k	2020-01-29
A-Pillar Mid Ay	10089	Endevco	757F-2k	2020-01-28
B-Pillar Sill Ay	A248855	MSI	52F-2000	2019-01-19
B-Pillar Low Ay	A248855	MSI	52F-2000	2019-01-19
B-Pillar Mid Ay	A248855	MSI	52F-2000	2019-01-19
Driver Seat Track at H-Point Ay	A267278	MSI	52F-2000	2019-08-02
Engine Top Ax	A248845	MSI	52F-2000	2019-10-01
Engine Top Ay	A248860	MSI	52F-2000	2019-09-15
Firewall Ay	10248	Endevco	757F-2k	2020-01-29
Right Roof Ay	10378	Endevco	757F-2k	2019-09-04
Right Floor Sill Ay	10118	Endevco	757F-2k	2020-01-29
Rear Floorpan Ax	10109	Endevco	757F-2k	2020-01-28
Rear Floorpan Ay	10425	Endevco	757F-2k	2019-09-05

**Table 3 - Rigid Pole Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Load Cell Pole Barrier #1 Force Y	131822A	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #2 Force Y	132304A	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #3 Force Y	19477	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #4 Force Y	19325	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #5 Force Y	131827A	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #6 Force Y	132302A	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #7 Force Y	19267	Interface	1220-FS	2019-05-02
Load Cell Pole Barrier #8 Force Y	19321	Interface	1220-FS	2019-05-02