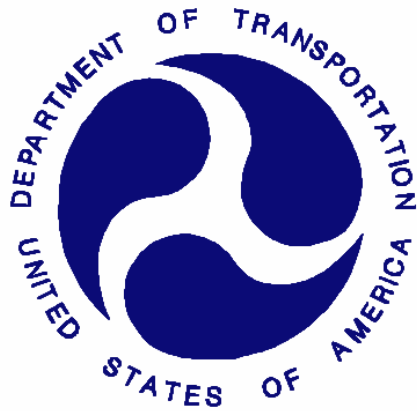


**REPORT NUMBER: SPNCAP-KAR-19-013
NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**HYUNDAI MOTOR COMPANY
2019 HYUNDAI KONA SE 5-DOOR MPV**

NHTSA No: M20194201

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



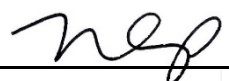
FEBRUARY 13, 2019

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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Prepared By: 
Mr. Malo L. Taua'ese, Engineering Technician
Applus IDIADA KARCO Engineering, LLC.

Reviewed By: 
Mr. Michael L. Dunlap, Director of Operations
Applus IDIADA KARCO Engineering, LLC.

Approved By: 
Mr. Steven D. Matsusaka, Engineering Manager
Applus IDIADA KARCO Engineering, LLC.

Approval Date: February 13, 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

1. Report No. SPNCAP-KAR-19-013	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 a 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201		5. Report Date February 13, 2019																												
		6. Performing Organization Code KAR																												
7. Authors Mr. Malo L. Taua'ese, Engineering Technician, Applus IDIADA KARCO Mr. Steven D. Matsusaka, Engineering Manager, Applus IDIADA KARCO		8. Performing Organization Report No. TR-P39001-01-NC																												
9. Performing Organization Name and Address Applus IDIADA KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301		10. Work Unit No.																												
		11. Contract or Grant No. DTNH22-14-D-00355L																												
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NRM-110) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		13. Type of Report and Period Covered Final Test Report, January 30, 2019 -February 13, 2019																												
		14. Sponsoring Agency Code NRM-110																												
15. Supplementary Notes																														
16. Abstract A 32.20 km/h 75° rigid pole side NCAP impact test was conducted on the subject 2019 Hyundai Kona SE 5-door MPV 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. The test was conducted at the Applus IDIADA KARCO Engineering, LLC. facility in Adelanto, California on January 30, 2019. The impact velocity was 31.81 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 18.9°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: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (SID-IIs)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>195.7</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>34</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>3311</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38</td> <td>26</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>16</td> </tr> </tbody> </table> 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.				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	195.7	Resultant Lower Spine Acceleration	g	82	34	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	3311	Maximum Thoracic Rib Deflection	mm	38	26	Maximum Abdominal Rib Deflection	mm	45	16
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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 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																												
19. Security Classification of this report UNCLASSIFIED	20. Security Classification of this page UNCLASSIFIED	21. No. of Pages 104	22. Price																											

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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 Hyundai Kona SE 5-door MPV. 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 Hyundai Kona SE 5-door MPV. The subject vehicle was towed into the rigid pole at an angle of 75.5° and a velocity of 31.81 km/h. The test was conducted by Applus IDIADA KARCO Engineering, LLC. in Adelanto, California on January 30, 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	Passenger ATD (SID-IIs)	
		IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	195.7
Lower Spine (T12) Resultant Acceleration	g	82	34
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3311
Maximum Thoracic Rib Deflection	mm	38*	26
Maximum Abdominal Rib Deflection	mm	45*	16

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No	No	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 Floor Sill Y channel failed at 17.6 ms, the Left B-Post at Sill Y channel failed at 35.5 ms, and the Lower Seat Track Y channel did not collect any data.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

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 ²	kPa	6.895
Temperature	General Use	°F	°C	$=(T_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf-ft	N•m	1.355

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20194201
Model Year	2019
Make	Hyundai
Model	Kona SE
Body Style	5-Door MPV
VIN	KM8K12AA8KU223810
Body Color	Sunset Orange
Odometer Reading (km / mi)	156 / 97
Engine Displacement (L)	2.0
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6 Speed
Overdrive	Yes
Final Drive	FWD
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

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

Does Owner's Manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Hyundai Motor Company
Date of Manufacture	Sep-18
Vehicle Type	MPV

GVWR (kg)	1804.5
GAWR Front (kg)	1039.9
GAWR Rear (kg)	1000

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2	3		5	A
Capacity Weight (VCW) (kg)				390.0	B
DSC x 68.04 (kg)				340.2	A-B
Cargo Weight (RCLW) (kg)				49.8	

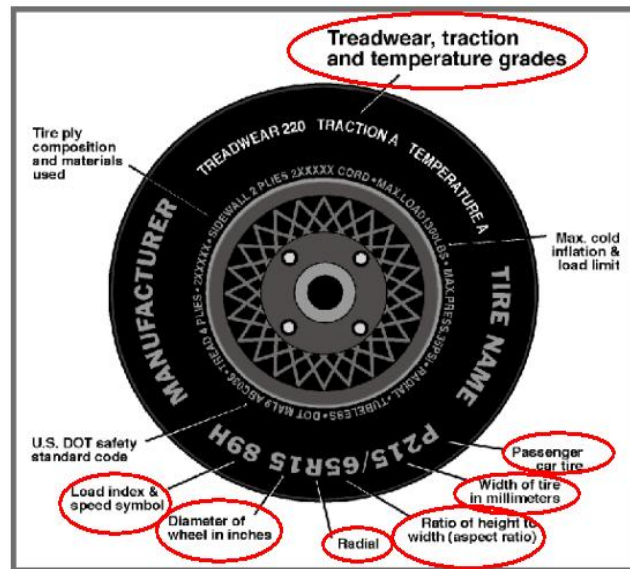
VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	230	230
Recommended Tire Size	P205/60R16	P205/60R16
Tire Size on Vehicle	P205/60R16	P205/60R16
Tire Manufacturer	Hankook	Hankook
Tire Model	Kinergy GT	Kinergy GT
Treadware	500	500
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 1 Nylon, 2 Steel	1 Polyester, 1 Nylon, 2 Steel
Load Index/Speed Symbol	92H	92H
Tire Material	Polyester, Nylon, Steel	Polyester, Nylon, Steel
DOT Safety Code Left	1T79X 1B H0	1T79X 1B H0
DOT Safety Code Right	1T79X 1B H1	1T79X 1B H1

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	230	230	230	230
Tire Placard	kPa	230	230	230	230
Owner's Manual	kPa	230	230	230	230
As Tested	kPa	230	230	230	230

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	410.5	252.0		421.5	290.5		420.0	303.5	
Right	kg	390.0	248.5		396.5	282.5		394.0	282.5	
Ratio	%	61.5%	38.5%	100.0%	58.8%	41.2%	100.0%	58.1%	41.9%	100.0%
Total	kg	800.5	500.5	1301.0	818.0	573.0	1391.0	814.0	586.0	1400.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1301.0	A
Actual Weight of 1 P572V ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	49.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1399.8	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)*	°	-0.9	-0.5	-0.4	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.5	-0.4	-0.3	Yes
Front Bumper-Line Angle (left-to-right)**	°	-0.4	-0.4	-0.4	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-0.4	-0.3	-0.3	Yes
Vehicle CG (Aft of Front Axle)	mm	1000	1071	1088	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	15	19	27	

*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 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Trunk Trim	9.0
Ballast / Equipment Added	32.0

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

DATA SHEET NO. 2**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

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	2.6	0.0	1.3
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			

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	1.3	559	Max			
			Mid	540	549	559
			Min			
Front Passenger Seat	Fixed	532	Max			
			Mid	515	523	532
			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 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

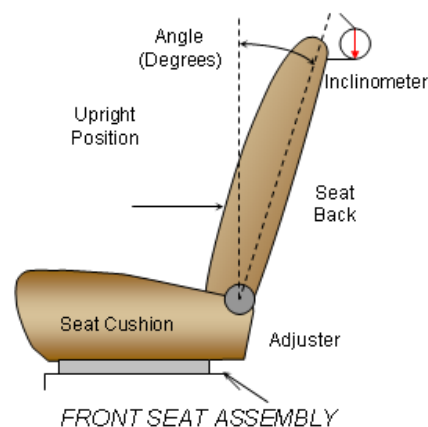
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	243	38	0	0
Front Passenger Seat	222	35	0	0
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 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 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	60.0	25	5.6	2
Front Passenger Seat	59.7	20	5.6	2
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 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201

Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

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, M3, M2, ..., L from top to bottom.

	Total No. of Positions	Placed in Position
Driver Seat	3	M

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	6	L

DATA SHEET NO. 2 ... (CONTINUED)

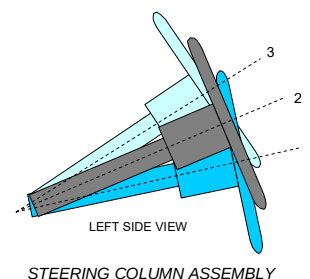
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

STEERING COLUMN ADJUSTMENT

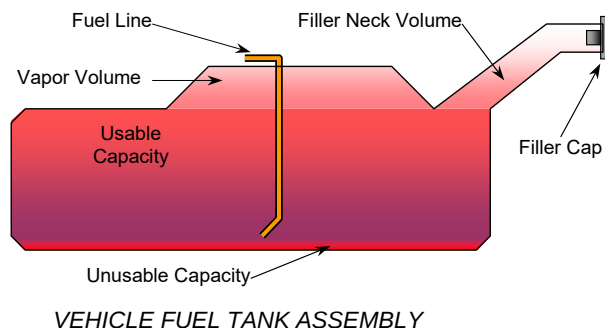
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	23.5	96
Geometric Center - Position 2	26.2	120.5
Uppermost - Position 3	28.9	145
Telescoping Steering Wheel Travel		49
Test Position	26.2	121



FUEL PUMP

The vehicle is equipped with an electric fuel pump. The pump operates after the ignition switch is turned ON. After that, the pump operates only while the engine is running.



FUEL TANK CAPACITY

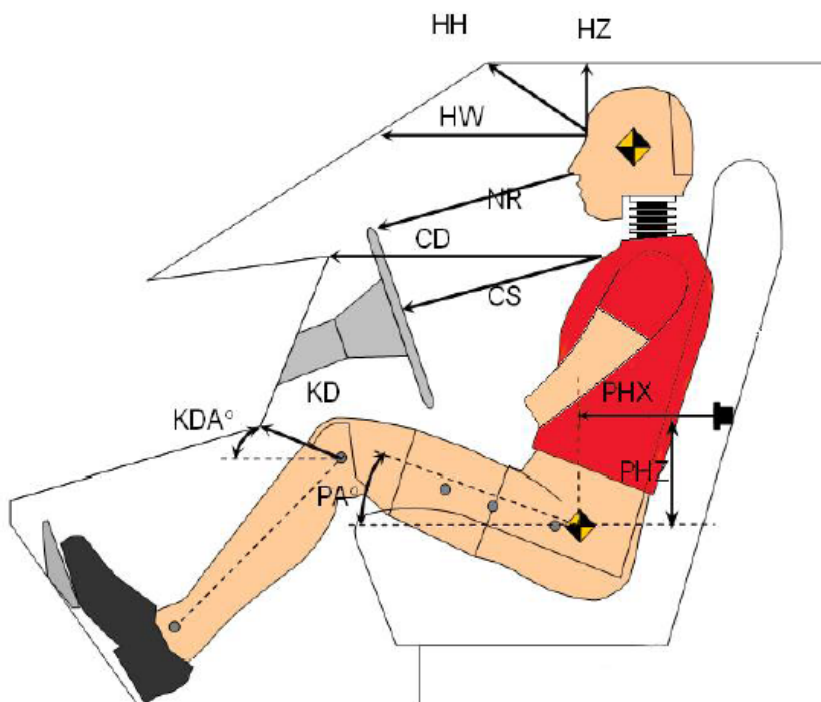
Usable Capacity of "Standard Tank" (see Owner's Manual)	49.96
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	46.46
Actual amount of Solvent Used in Test	46.46
1/3 of Usable Capacity	16.65

Is the Actual Amount of Solvent Used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in the Form No. 1? ☒ Yes ☐ No

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

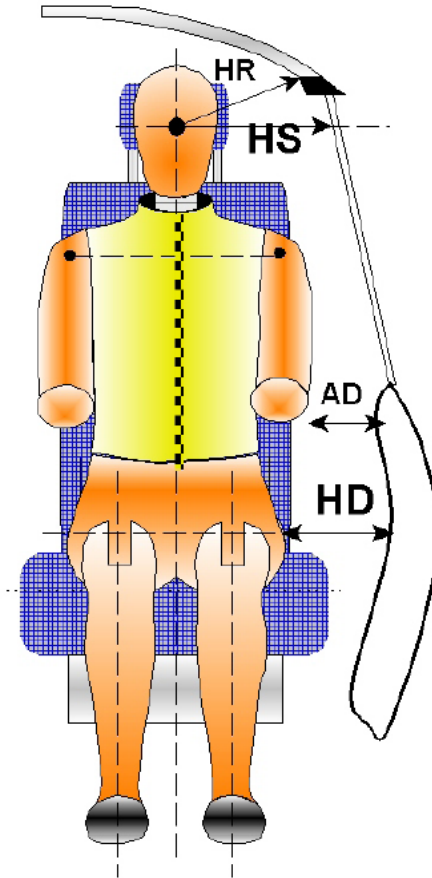


Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	290	
HW	Head to Windshield	620	
HZ	Head to Roof	216	
NR	Nose to Rim	255	
CD	Chest to Dash	421	
CS	Chest to Steering Wheel	194	
KD(L)/KDA(L)°	Left Knee to Dash	133	19.2
KD(R)/KDA(R)°	Right Knee to Dash	98	35.1
PAX°	Pelvic Tilt Angle (x-axis)		20.1
PAY°	Pelvic Tilt Angle (y-axis)		0.2
PHX	Hip Point to Striker (x-axis)	307	
PHZ	Hip Point to Striker (z-axis)	253	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

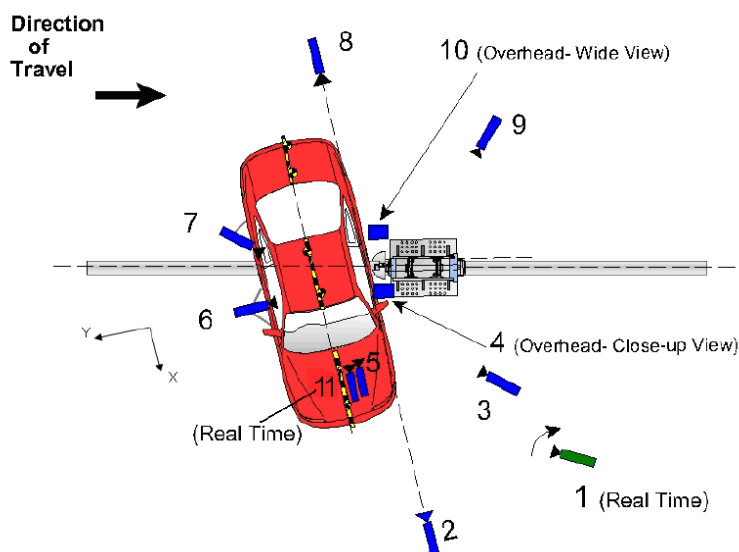


Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	265
HS	Head to Side Window	mm	390
AD	Arm to Door	mm	167
HD	Hip Point to Door	mm	162

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



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	1.13	0.47	-1.35	8.5	1000
6	On-Board - Dummy Side View	-0.05	1.80	-1.30	8.5	1000
7	On-Board - Dummy Rear Oblique View	-1.09	1.67	-1.36	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	1.15	0.49	-1.43		30

*All measurements accurate to ± 6 mm

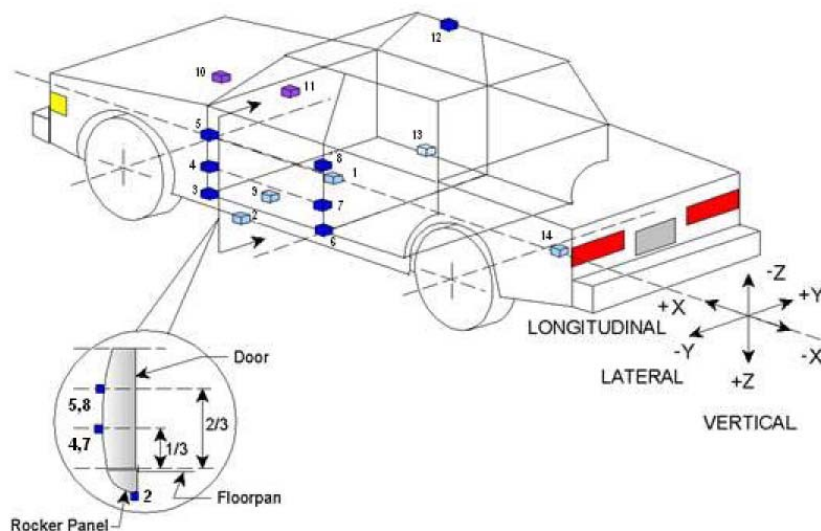
INSTRUMENTATION

Driver Dummy Channels	19
Vehicle Structure Accelerometers	18
Pole Load Cells	8
Total	45

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

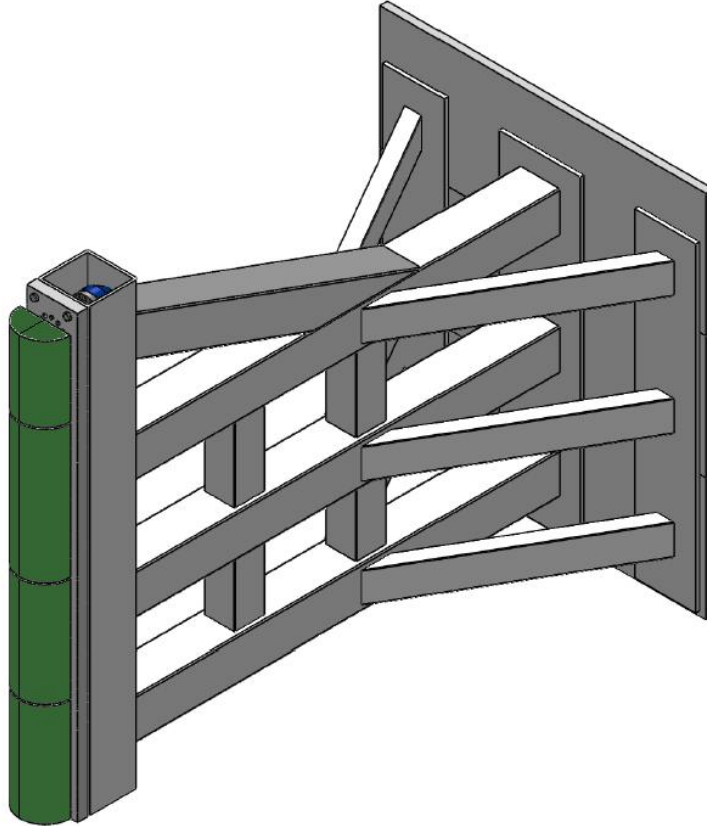


Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1730	0	-450
2	Left Floor Sill	2200	-750	-220
3	A-Pillar Sill	2680	-720	-420
4	A-Pillar Low	2800	-790	-550
5	A-Pillar Mid	2800	-790	-740
6	B-Pillar Sill	1880	-630	-350
7	B-Pillar Low	1780	-615	-600
8	B-Pillar Mid	1780	-615	-850
9	Driver Seat Track	2060	-550	-470
10	Engine Top	3470	0	-890
11	Firewall	3150	250	-930
12	Right Roof	1900	500	-1560
13	Right Floor Sill	2060	720	-425
14	Rear Floorpan	830	0	-580

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 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



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 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

TEST DUMMY INFORMATION AND CONTACT POINTS

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

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/Other Door
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge 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 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

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	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	

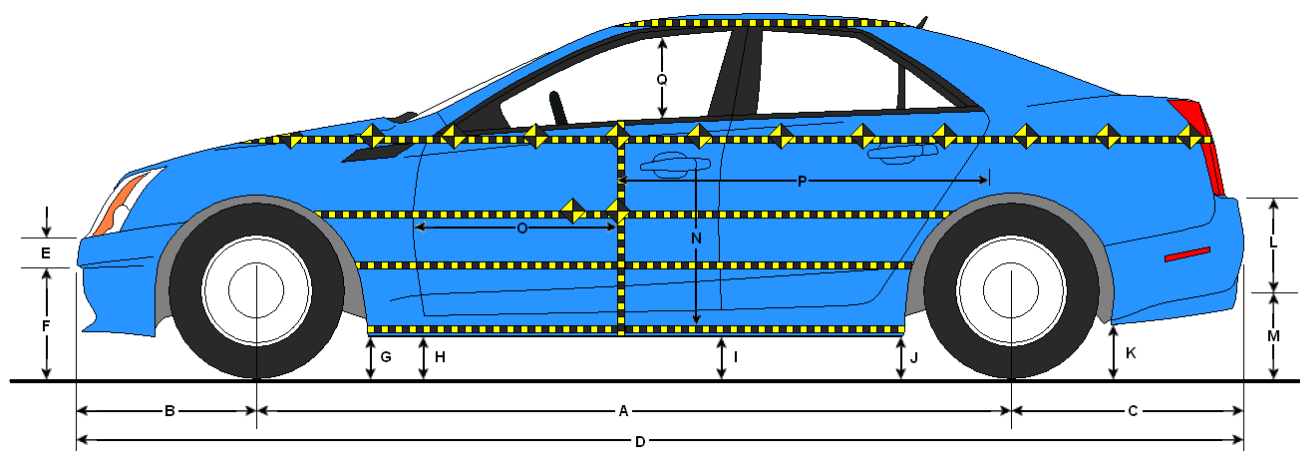
IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1096
Actual Impact Point (Aft of Front Axle)	mm		1083
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	-13
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	75.5
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	31.81
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	31.86

DATA SHEET NO. 9

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



LEFT SIDE VIEW

All measurements in mm with tolerance of ± 3 mm

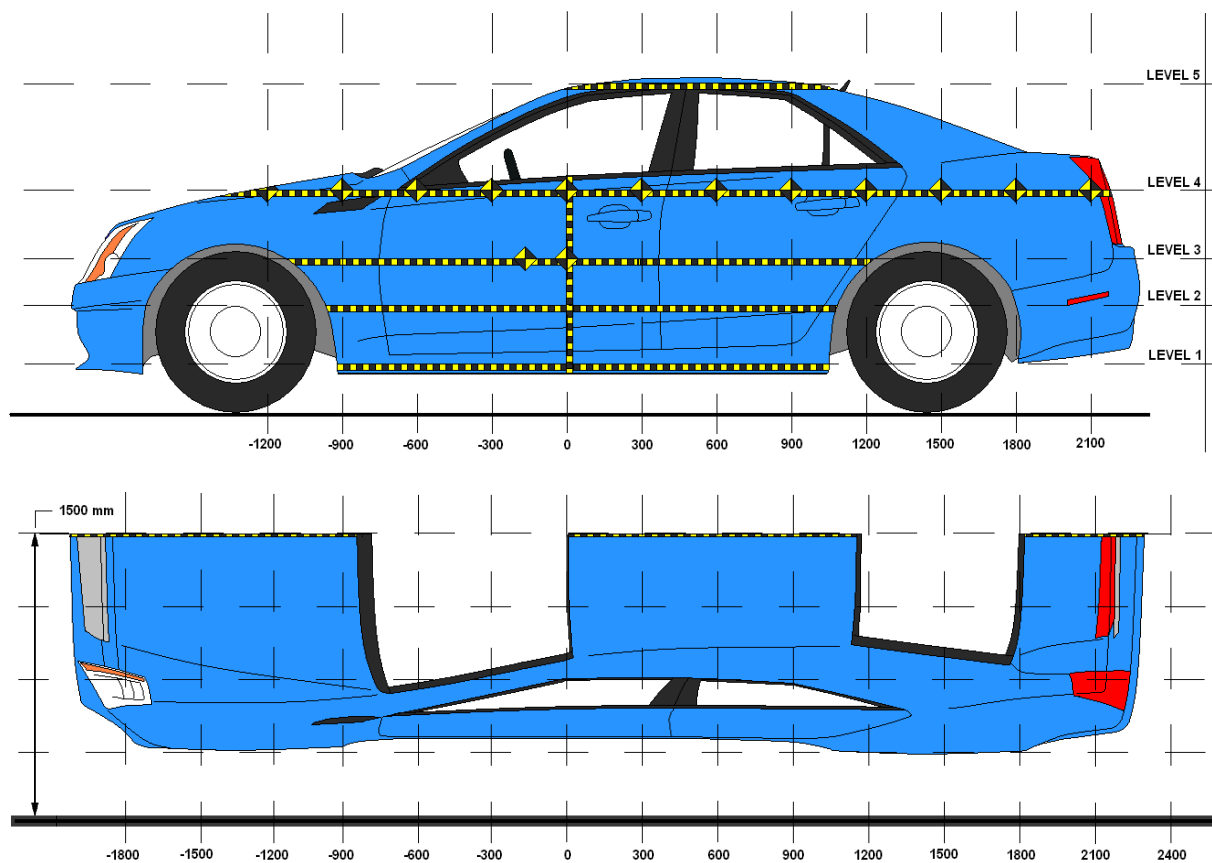
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2600	2540	-60
B	Front Axle to FSOV	846	871	25
C	Rear Axle to RSOV	719	730	11
D	Total Length at Centerline	4164	4141	-23
E	Front Bumper Thickness	154	157	3
F	Front Bumper Bottom to Ground	390	370	-20
G	Sill Height at Front Wheel Well	309	287	-22
H	Sill Height at Front Door Leading Edge	310	296	-14
I	Sill Height at B-Pillar	320	307	-13
J1	Sill Height at Rear Wheel Well	329	344	15
J2	Pinch Weld Height at Rear Wheel Well	272	276	4
K	Sill Height Aft of Rear Wheel Well	399	399	0
L	Rear Bumper Thickness	152	153	1
M	Rear Bumper Bottom to Ground	492	491	-1
N	Sill Height to Bottom of Front Window Sill	723	704	-19
O	Front Door Leading Edge to Impact CL	636	555	-81
P	Rear Door Trailing Edge to Impact CL	1385	1314	-71
Q	Front Window Opening	417	420	3
R	Right Side Length	3025	3037	12
S	Left Side Length	3022	2953	-69
T	Vehicle Width at B-Pillar	1776	1694	-82

DATA SHEET NO. 10

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



NOTE: All measurements in mm with tolerance of ± 3 mm

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	317	285	150
2	Occupant H-Point	646	321	0
3	Mid-Door	742	336	0
4	Window Sill	1019	313	150
5	Window Top	1539	118	0

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

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			598	707				622	727				24	20	
-750		597	607	695			625	634	721			28	27	26	
-600	634	612	616	686		642	643	656	718		8	31	40	32	
-450	642	620	617	680		694	701	684	734		52	81	67	54	
-300	646	618	614	668		746	796	784	792		100	178	170	124	
-150	644	616	611	657		831	856	875	863		187	240	264	206	
0	644	615	610	648	902	918	936	946	955	1020	274	321	336	307	118
150	643	615	609	642	917	928	932	943	955	1030	285	317	334	313	113
300	642	617	610	644	912	814	823	828	850	1004	172	206	218	206	92
450	642	620	613	648	915	752	730	720	749	986	110	110	107	101	71
600	643	624	618	654	919	719	717	707	742	971	76	93	89	88	52
750	642	628	623	660	925	689	701	693	732	962	47	73	70	72	37
900	639	625	627	667	930	658	672	680	722	960	19	47	53	55	30
1050	633	612	618	673	939	624	636	651	709	962	-9	24	33	36	23
1200		601	608	681	950		600	617	699	966		-1	9	18	16
1350			598	653	963			612	655	974			14	2	11
1500				649					664					15	
1650															
1800															
1950															
2100															
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

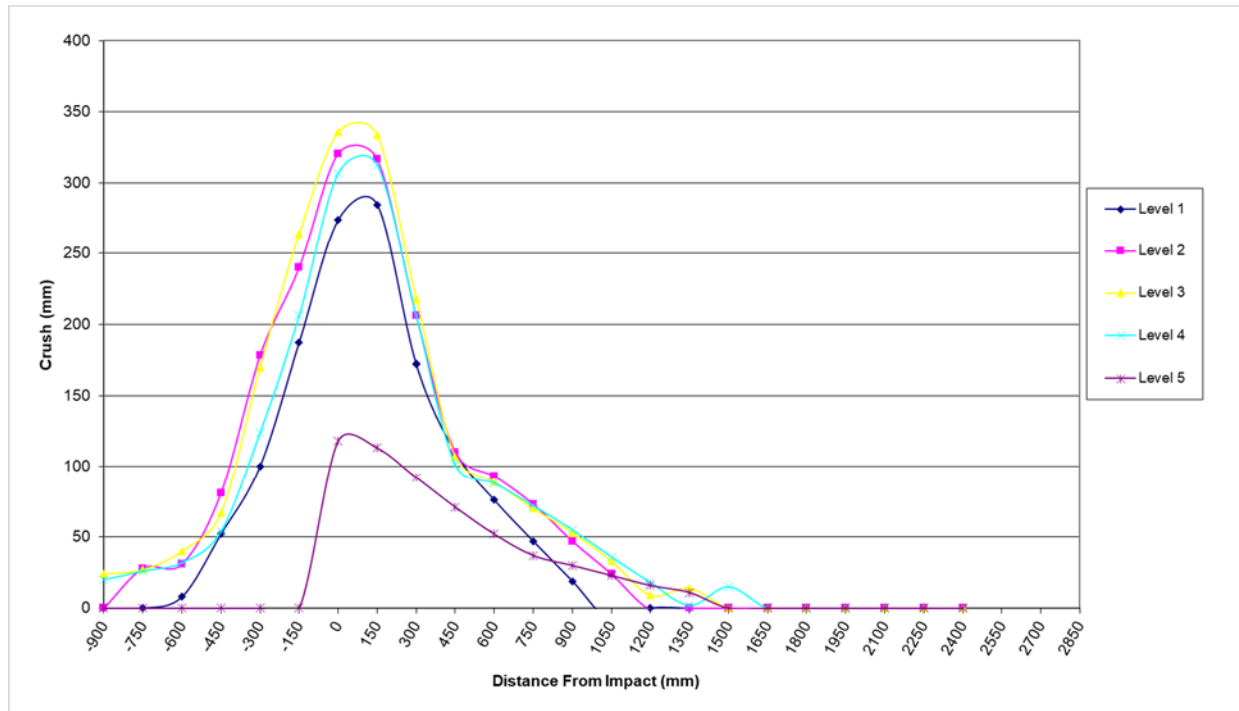
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV

NHTSA No. M20194201

Test Program: NCAP Side Pole Impact Test

Test Date: 01/30/19

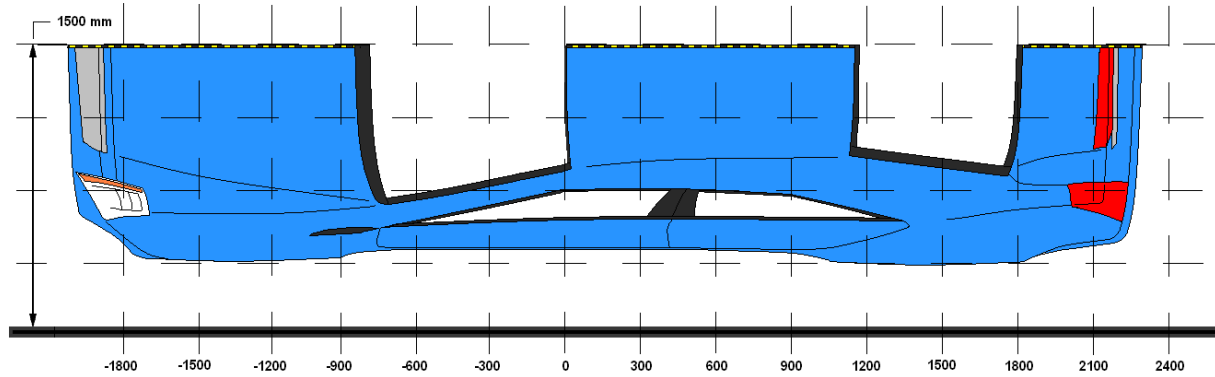


DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201

Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	1500	4	649	664	15
2	1050	4	673	709	36
3	600	2	624	717	93
4	0	3	610	946	336
5	-450	2	620	701	81
6	-900	3	598	622	24

DATA SHEET NO. 12

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201
 Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19

Time of Impact: 18.9° C Test Time: 11:55 AM

From impact until vehicle motion ceases: 0 oz.

(Maximum allowable = 1 oz.)

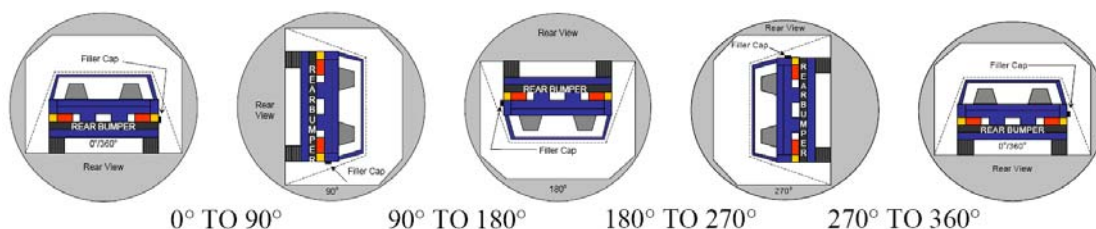
For the 5 minute period after motion ceases: 0 oz.

(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°	79	300	379
90° To 180°	81	300	381
180° To 270°	82	300	382
270° To 360°	80	300	380

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

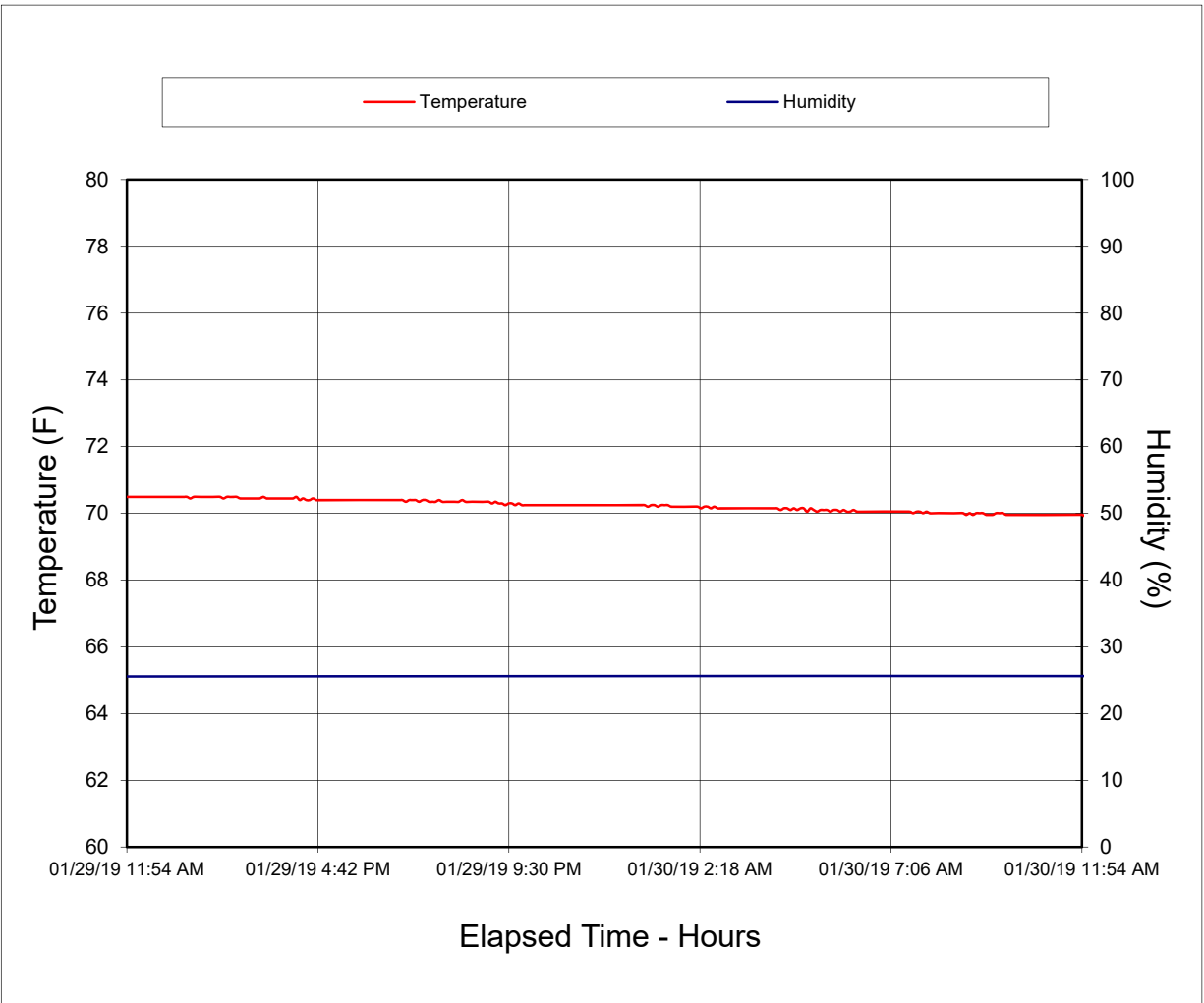
Test Phase	Spillage Location
0° To 90°	No Spillage Occurred
90° To 180°	No Spillage Occurred
180° To 270°	No Spillage Occurred
270° To 360°	No Spillage Occurred

DATA SHEET NO. 13

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV NHTSA No. M20194201

Test Program: NCAP Side Pole Impact Test Test Date: 01/30/19



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

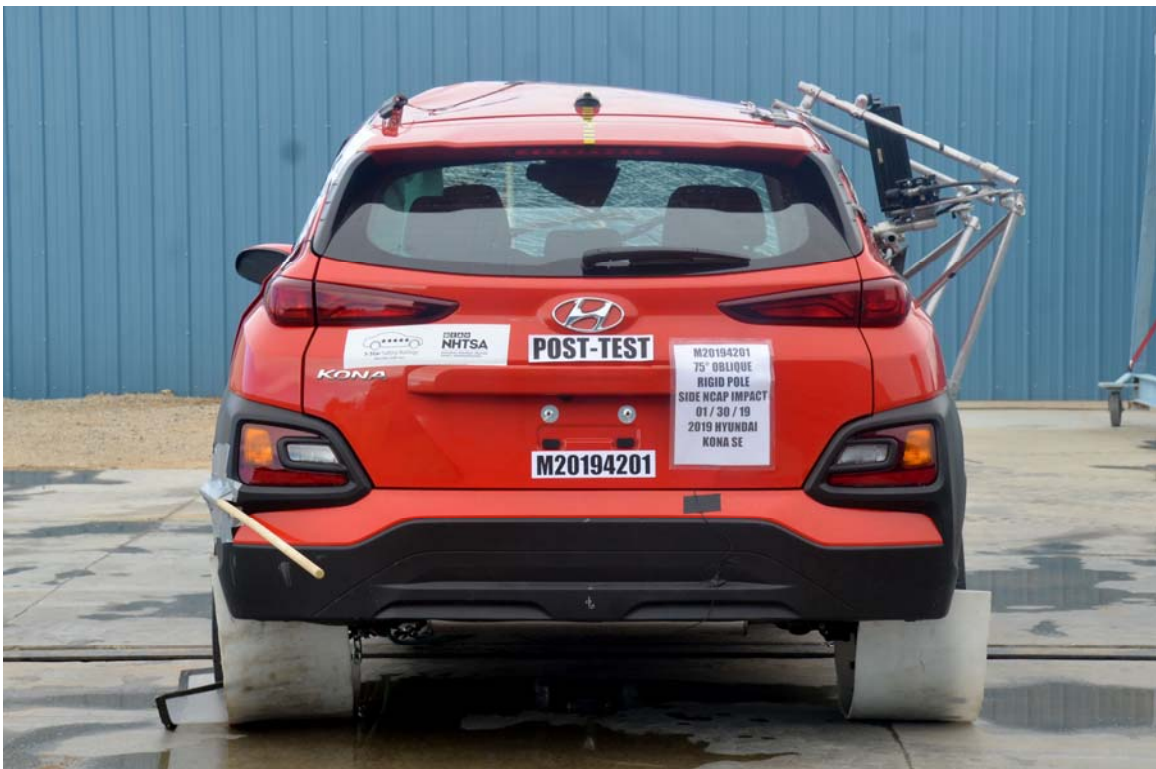


FIGURE 12. Post-Test Rear View of Test Vehicle



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



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

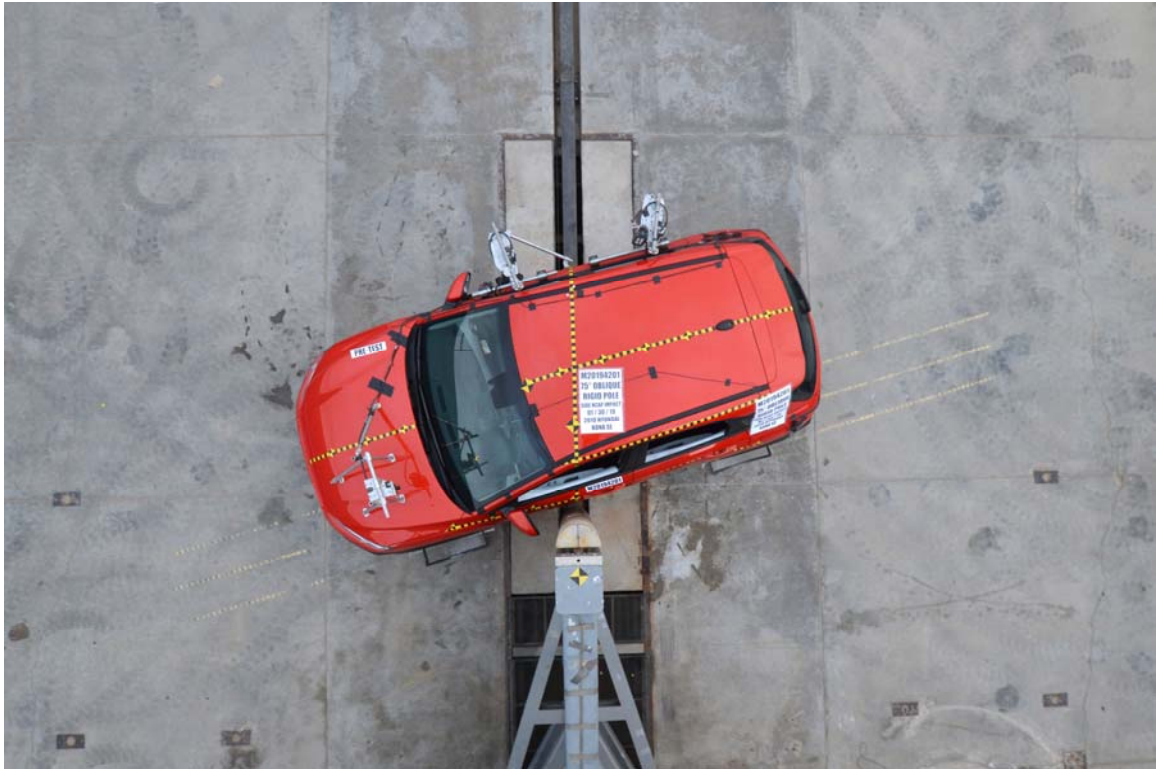


FIGURE 15. Pre-Test Overhead View of Test Area

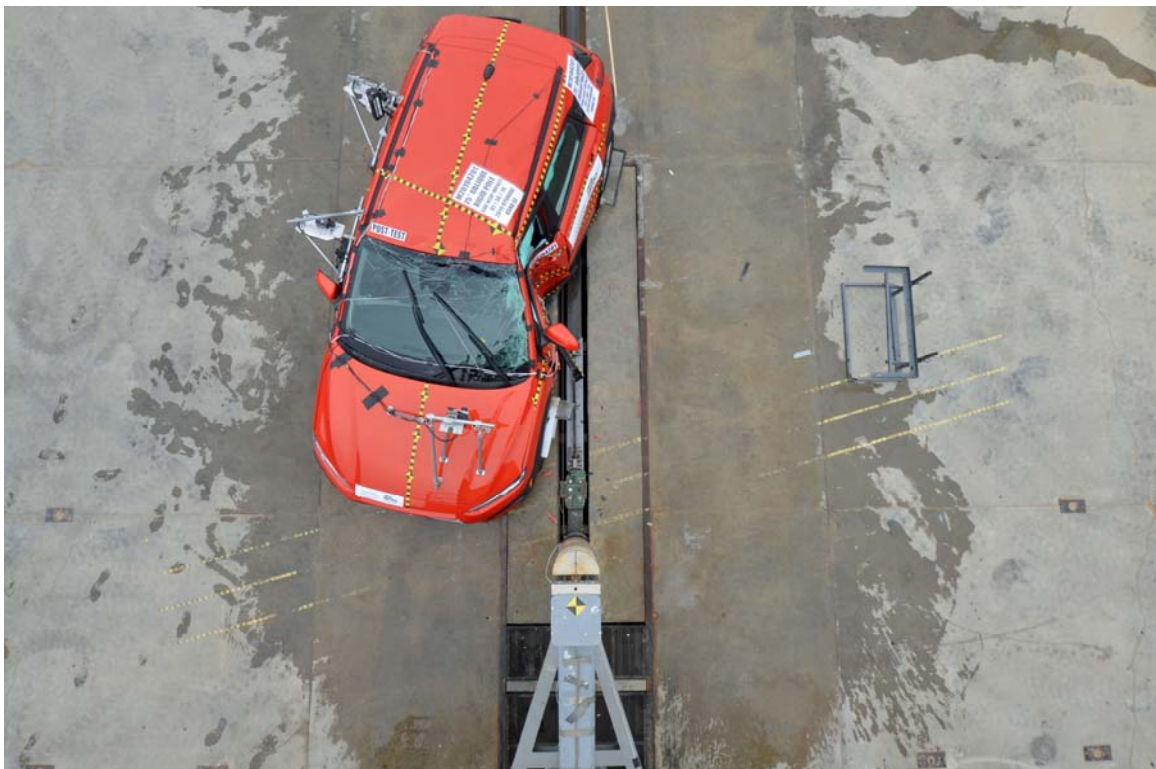


FIGURE 16. Post-Test Overhead View of Test Area



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

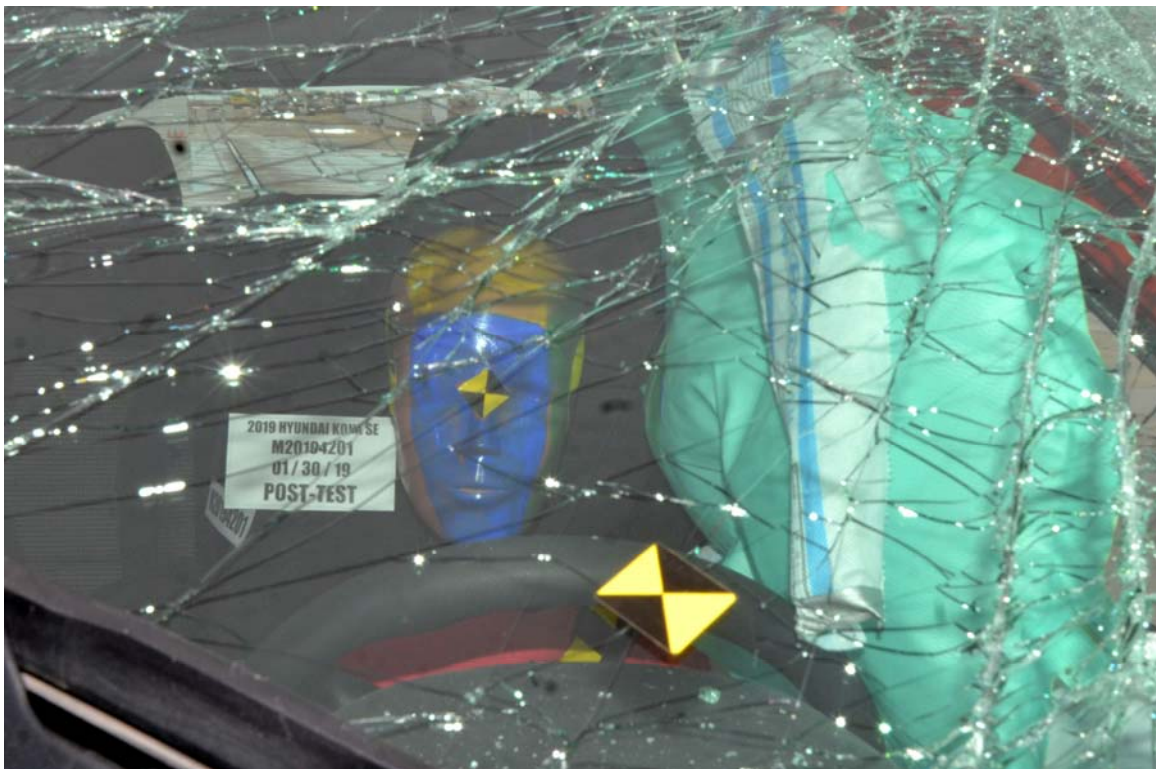


FIGURE 22. Post-Test Front Close-Up View of Dummy



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



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

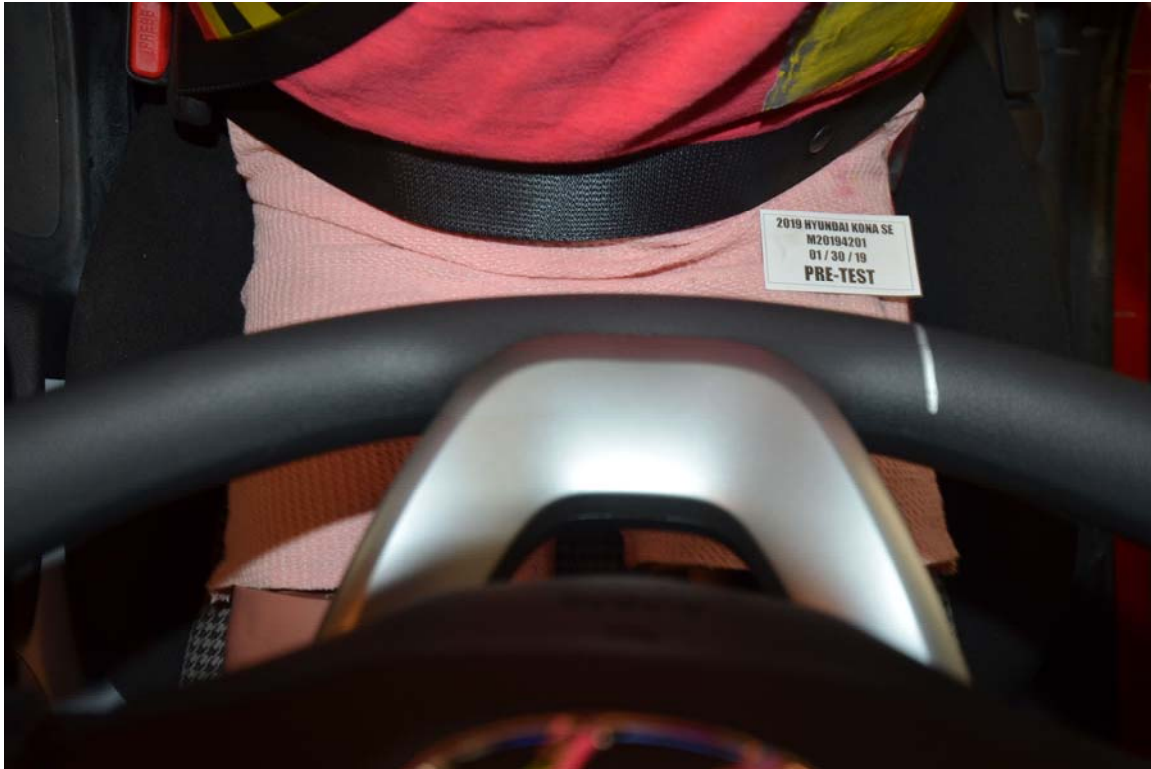


FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



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

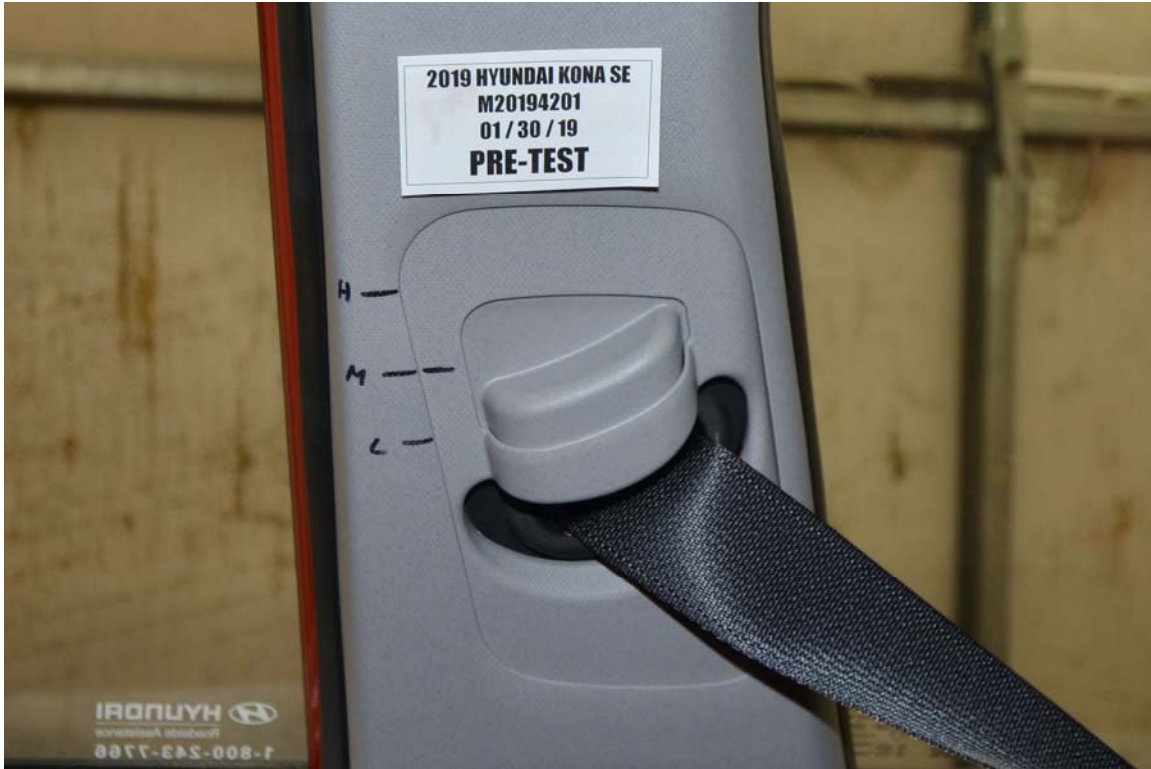


FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



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

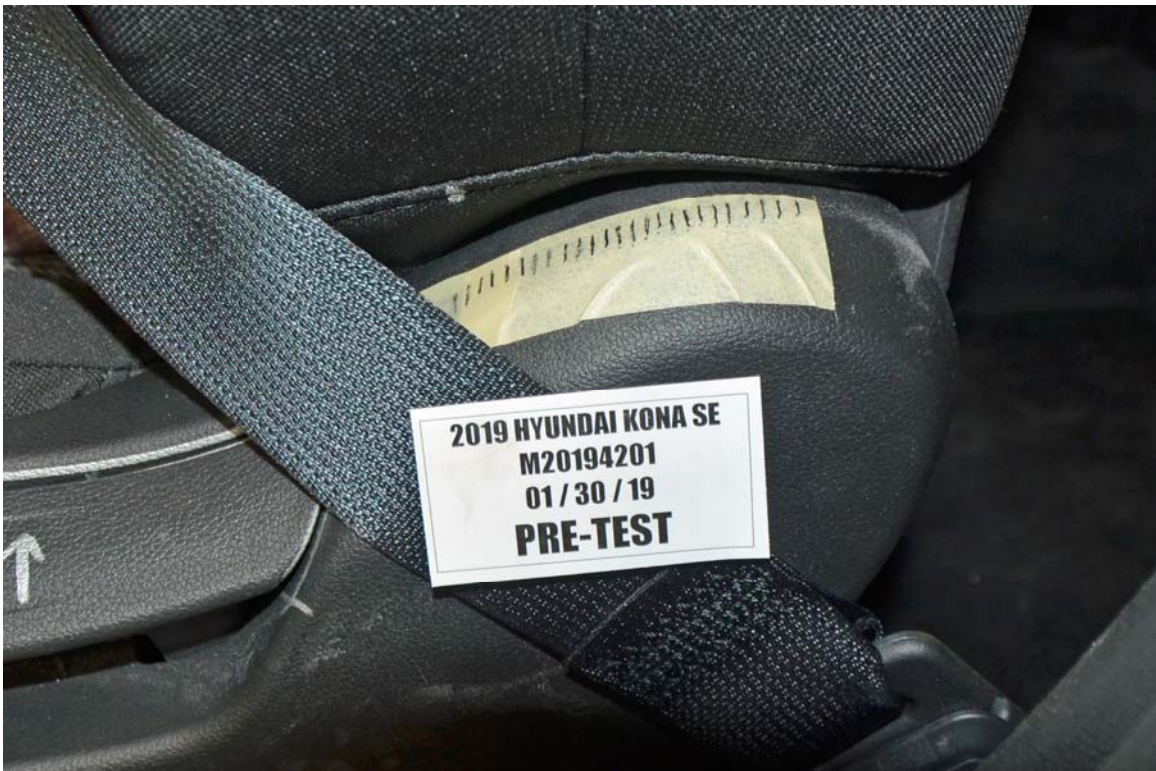


FIGURE 38. Pre-Test Close-Up Left Side View of Driver Seat Back



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

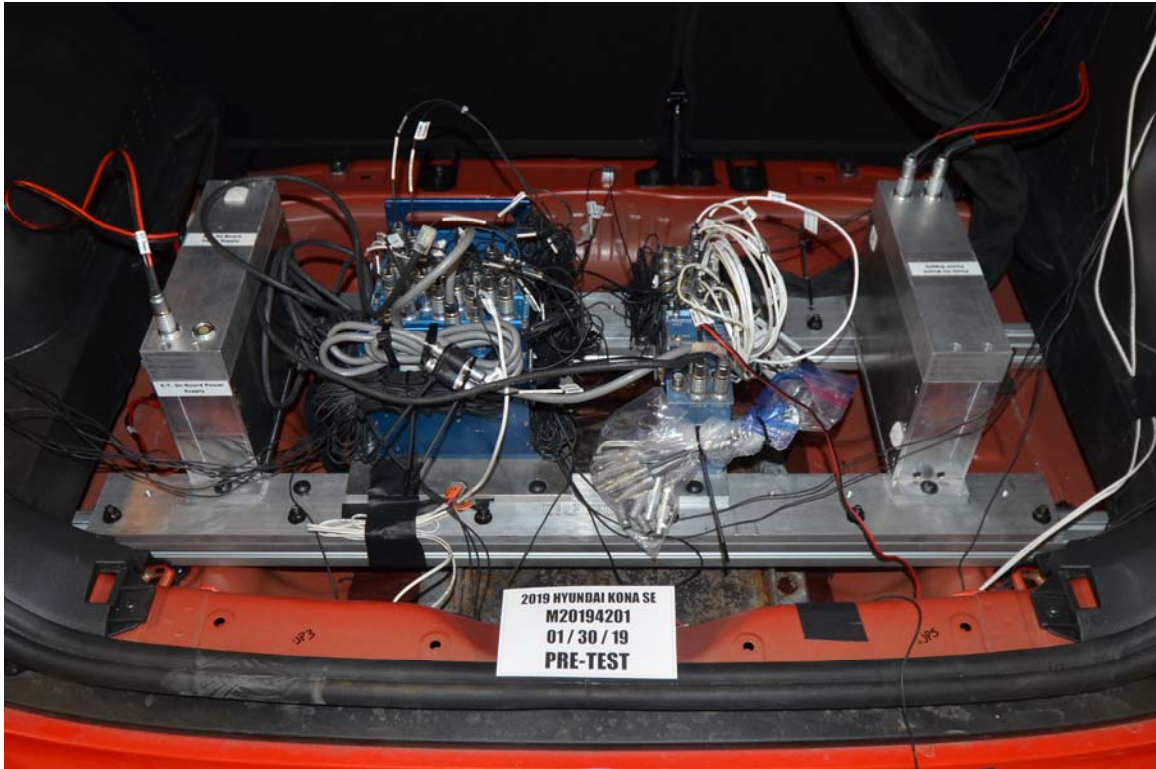


FIGURE 61. Pre-Test Ballast View



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

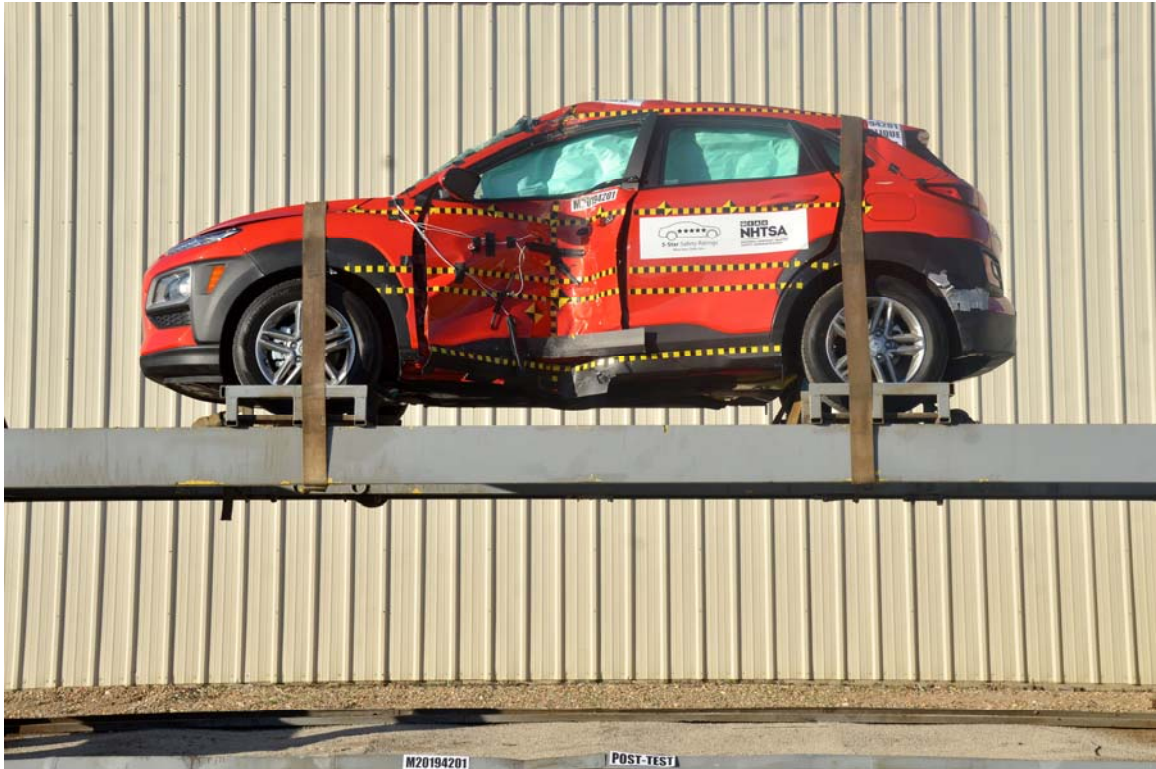


FIGURE 63. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 64. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 67. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 68. Impact Event

Photograph Not Applicable

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

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

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)

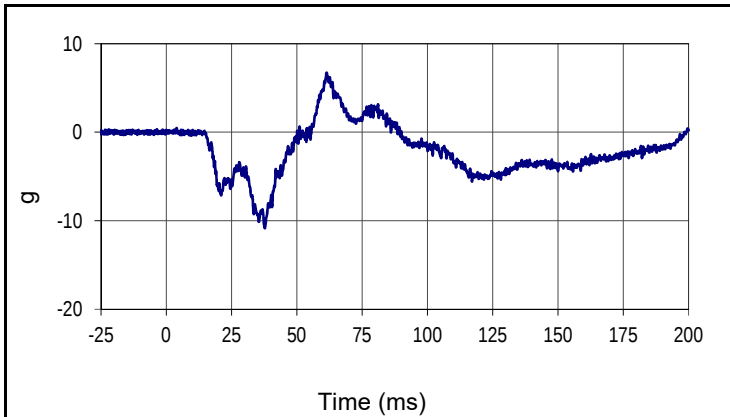
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration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

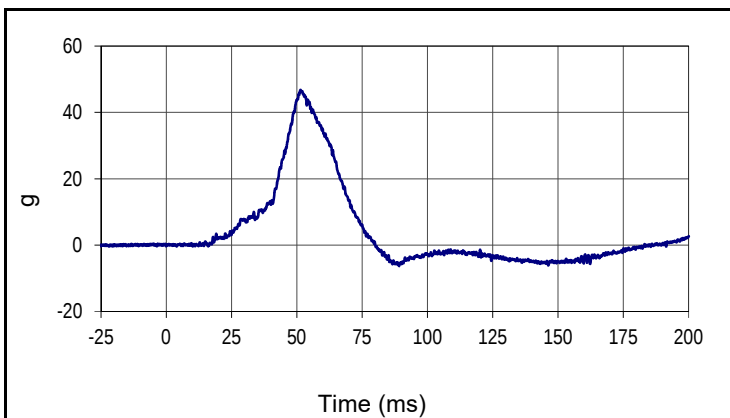
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV
 Test Program: NCAP Side Pole Impact Test

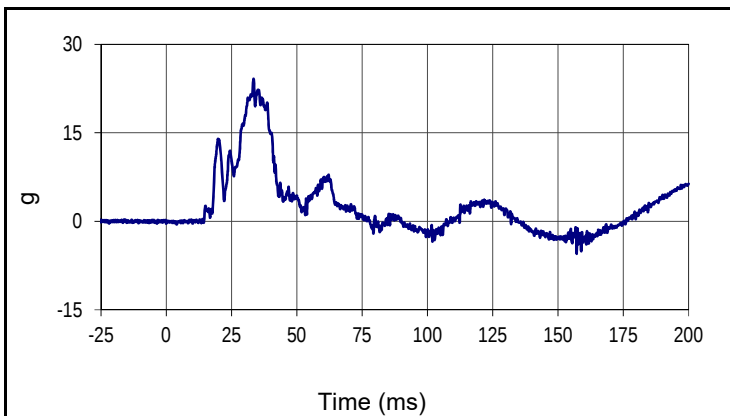
NHTSA No.: M20194201
 Test Date: 01/30/19



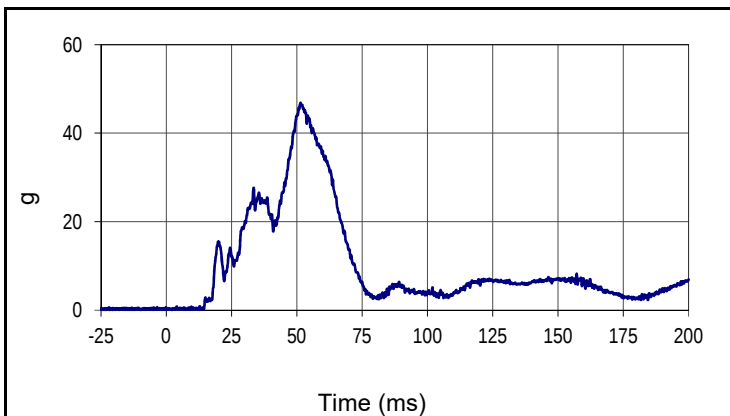
Curve Description			
Driver Head Acceleration X Primary			
Plot No.		SAE Class	Units
001		1000	g
Max	Time	Min	Time
6.7	61.4	-10.9	37.7



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.		SAE Class	Units
002		1000	g
Max	Time	Min	Time
46.8	51.4	-6.3	89.1



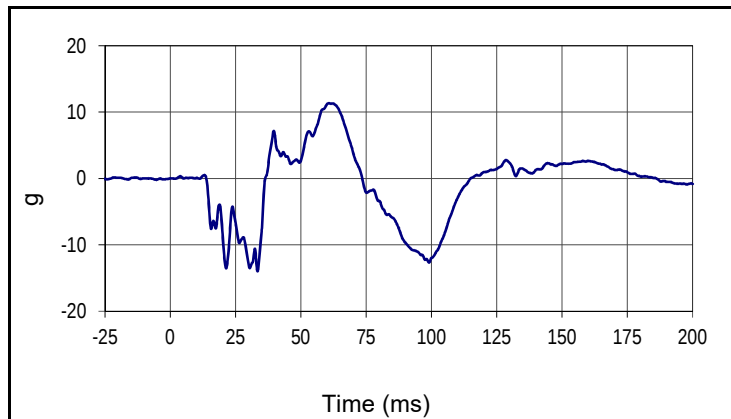
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.		SAE Class	Units
003		1000	g
Max	Time	Min	Time
24.2	33.4	-5.5	157.1



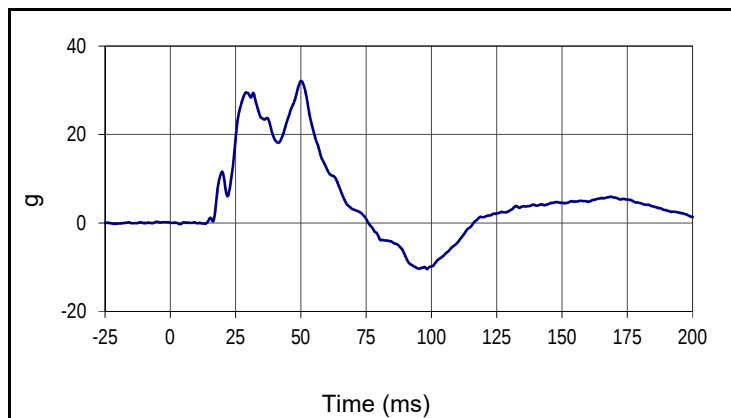
Curve Description			
Driver Head Acceleration Primary Resultant			
Plot No.		SAE Class	Units
004		1000	g
Max	Time	Min	Time
46.9	51.4	0.1	2.5

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV
 Test Program: NCAP Side Pole Impact Test

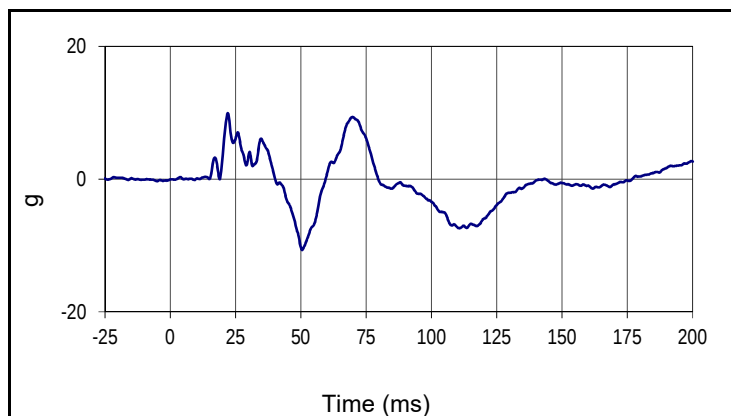
NHTSA No.: M20194201
 Test Date: 01/30/19



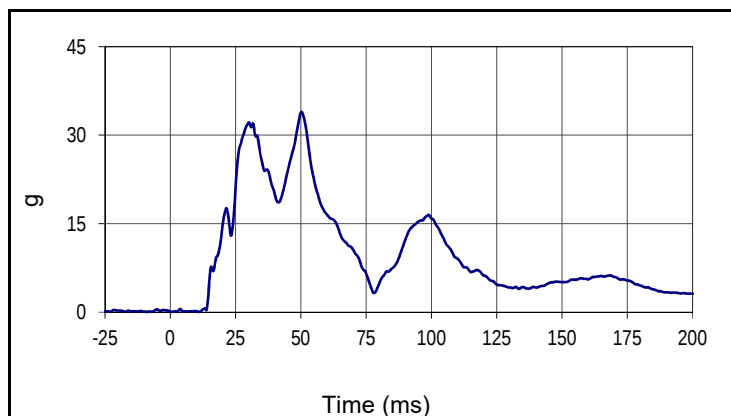
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.		SAE Class	Units
005		180	g
Max	Time	Min	Time
11.3	60.6	-14.0	33.4



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.		SAE Class	Units
006		180	g
Max	Time	Min	Time
32.1	50.1	-10.4	98.3



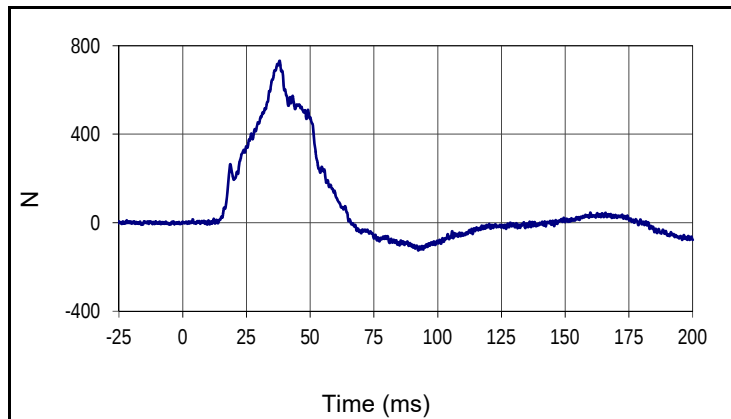
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.		SAE Class	Units
007		180	g
Max	Time	Min	Time
9.9	22.0	-10.7	50.4



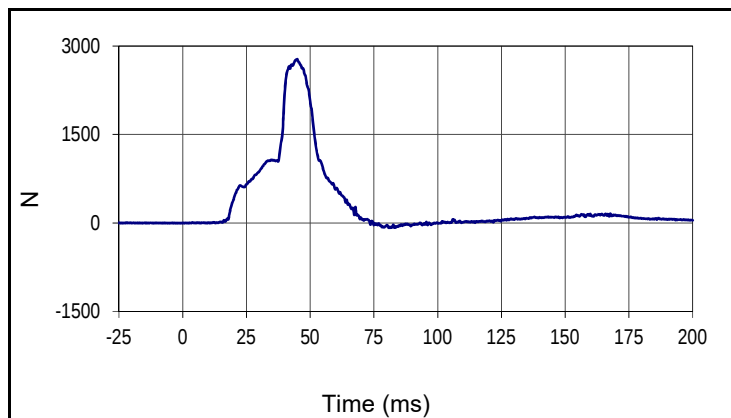
Curve Description			
Driver Lower Spine T12 Acceleration Resultant			
Plot No.		SAE Class	Units
008		180	g
Max	Time	Min	Time
33.9	50.2	0.0	2.4

Test Vehicle: 2019 Hyundai Kona SE 5-Door MPV
 Test Program: NCAP Side Pole Impact Test

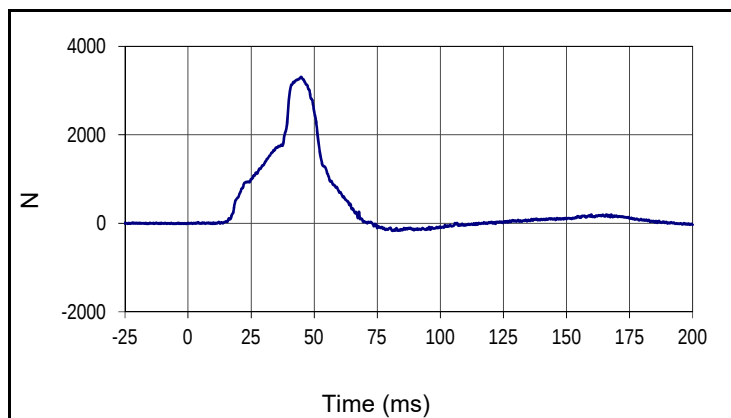
NHTSA No.: M20194201
 Test Date: 01/30/19



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.		SAE Class	Units
009		600	N
Max	Time	Min	Time
732.1	38.0	-125.9	92.4



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.		SAE Class	Units
010		600	N
Max	Time	Min	Time
2777.2	44.9	-82.5	80.8



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.		SAE Class	Units
011		600	N
Max	Time	Min	Time
3310.5	44.9	-170.2	80.9

APPENDIX C
ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA
LEFT SIDE CONFIGURATION



SID-IIs Small Side Impact ATD
External Measurements

ATD Serial No.: 299

Test Date: 2018-12-27

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.5	Pass
Laboratory Relative Humidity	%	10	70	24	Pass
A - Sitting Height	mm	772	788	783	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	84	Pass
D - H Point From Seatback	mm	141	151	147	Pass
E - Shoulder Pivot From Backline	mm	97	107	104	Pass
F - Thigh Clearance	mm	119	135	131	Pass
G - Head Breadth	mm	140	148	142	Pass
H - Head Back From Backline	mm	40	46	43	Pass
I - Head Depth	mm	178	188	186	Pass
J - Head Circumference	mm	541	551	545	Pass
K - Buttock To Knee Length	mm	514	540	526	Pass
L - Popliteal Height	mm	343	369	358	Pass
K - Knee Pivot To Floor Height	mm	392	409	403	Pass
N - Buttock Popliteal Length	mm	416	442	436	Pass
O - Chest Depth W/O Jacket	mm	195	211	201	Pass
P - Foot Length	mm	216	232	226	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	317	Pass
R - Arm Length	mm	249	259	256	Pass
S - Knee Joint To Seatback	mm	477	493	488	Pass
V - Shoulder Width	mm	341	357	349	Pass
W - Foot Width	mm	78	94	89	Pass
Y - Chest Circumference W/Jacket	mm	851	881	858	Pass
Z - Waist Circumference	mm	761	791	782	Pass
			Overall Test Results		Pass

Technician: _____

J. Hernandez

Approved By: _____

P. Puzzuto

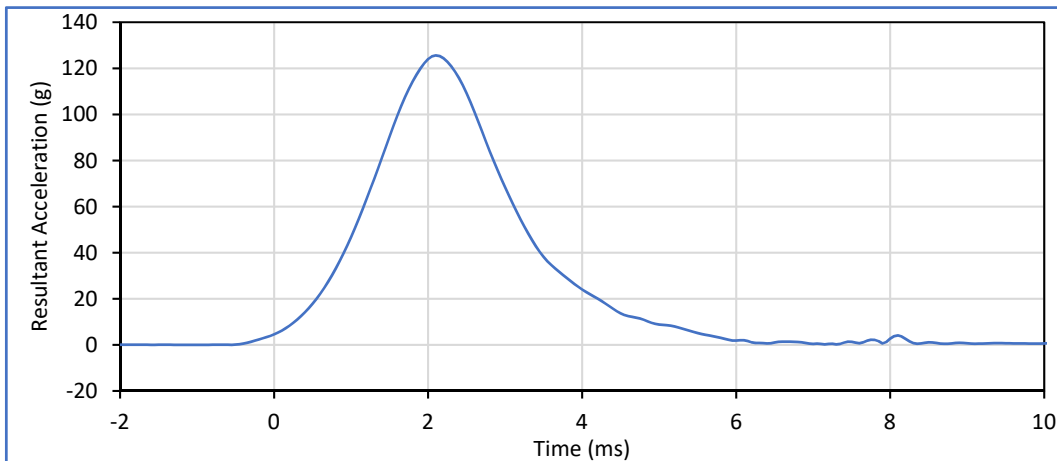


SID-IIs Small Side Impact ATD Head Drop

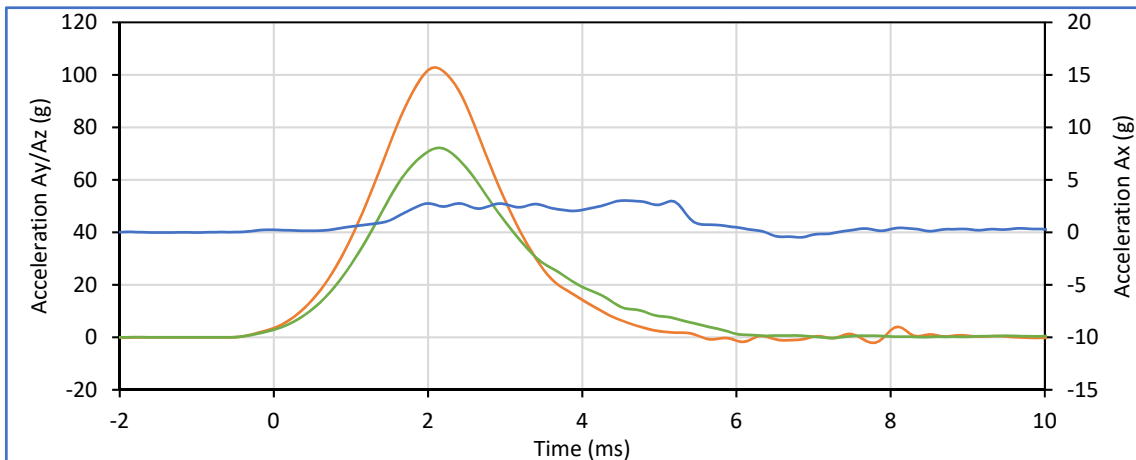
ATD Serial No.: 299

Test Date: 2018-12-27

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.5	Pass
Laboratory Humidity	%	10	70	24	Pass
Peak Resultant Acceleration	g	115.0	137.0	125.6	Pass
Peak Head Ax	g	-15.0	15.0	-0.5	Pass
Oscillations After Main Pulse	%	0.0	15.0	3.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	



Head Resultant
Max:125.6@2.1
Min:0.2@7.3
SAE Class 1000



Head Ax
Max:3.0@4.6
Min:-0.5@6.8
SAE Class 1000
Head Ay
Max:102.8@2.1
Min:-2.1@7.8
SAE Class 1000
Head Az
Max:72.2@2.2
Min:-0.3@7.3
SAE Class 1000

Technician: J. Hernandez

Approved By: P. Puzzuto

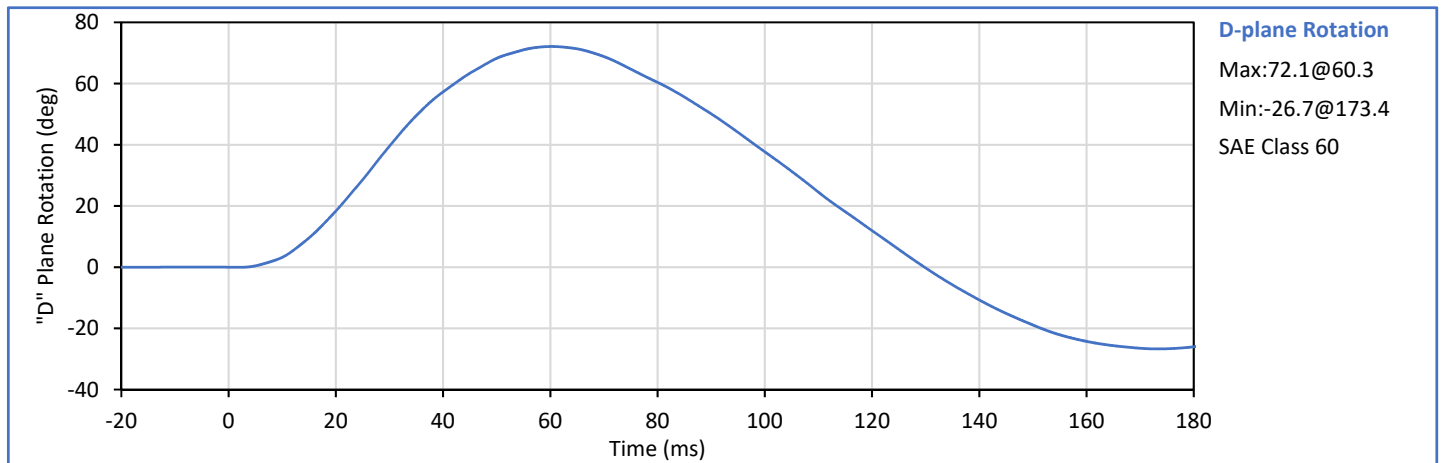
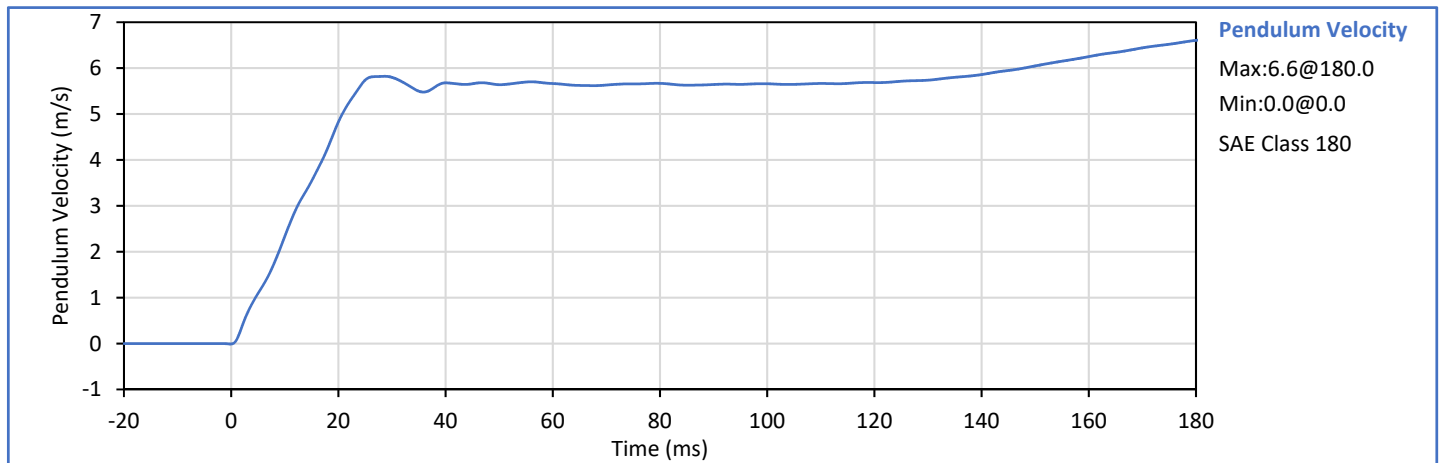


**SID-IIs Small Side Impact ATD
Neck Flexion**

ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	20	Pass
Pendulum Velocity	m/s	5.51	5.63	5.56	Pass
Pendulum Decel at 10 ms	m/s	2.20	2.80	2.33	Pass
Pendulum Decel at 15 ms	m/s	3.30	4.10	3.54	Pass
Pendulum Decel at 20 ms	m/s	4.40	5.40	4.82	Pass
Pendulum Decel at 25 ms	m/s	5.40	6.10	5.74	Pass
Pendulum Decel from 25-100 ms	m/s	5.50	6.20	5.82	Pass
Peak "D" Plane Rotation	deg	71.0	81.0	72.1	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	60.3	Pass
Peak Occ. Condyle Moment	Nm	-44.0	-36.0	-42.1	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	109.5	Pass
Overall Test Results				Pass	



Technician: _____

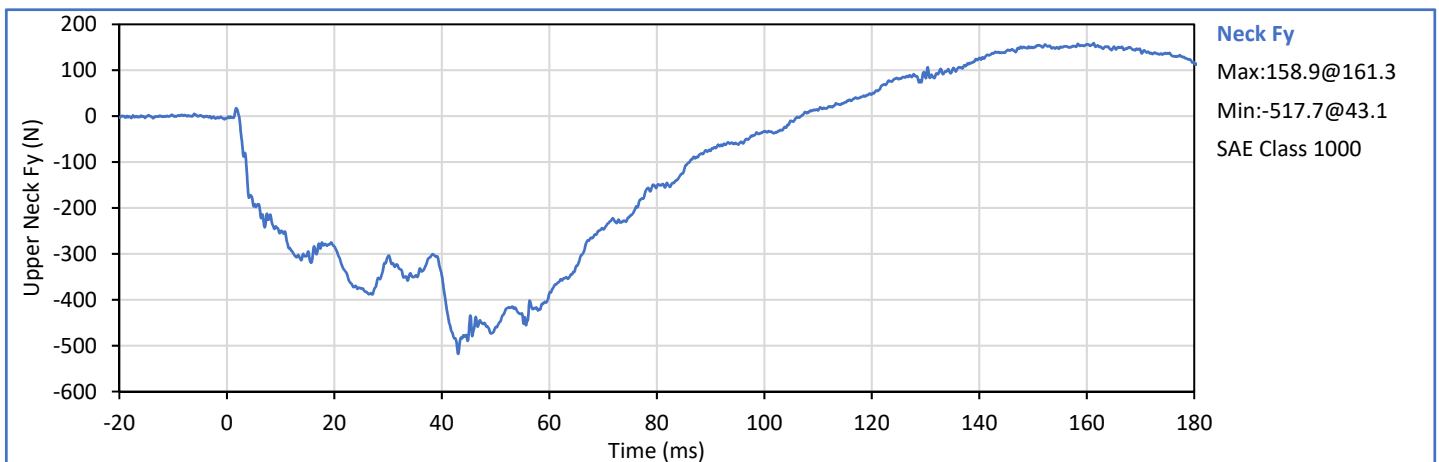
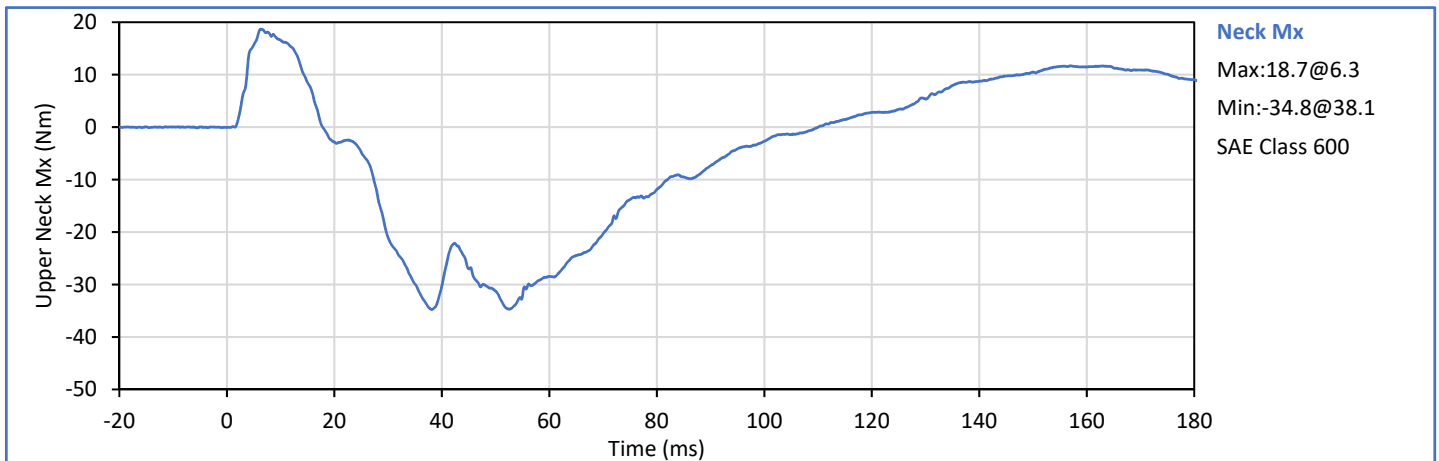
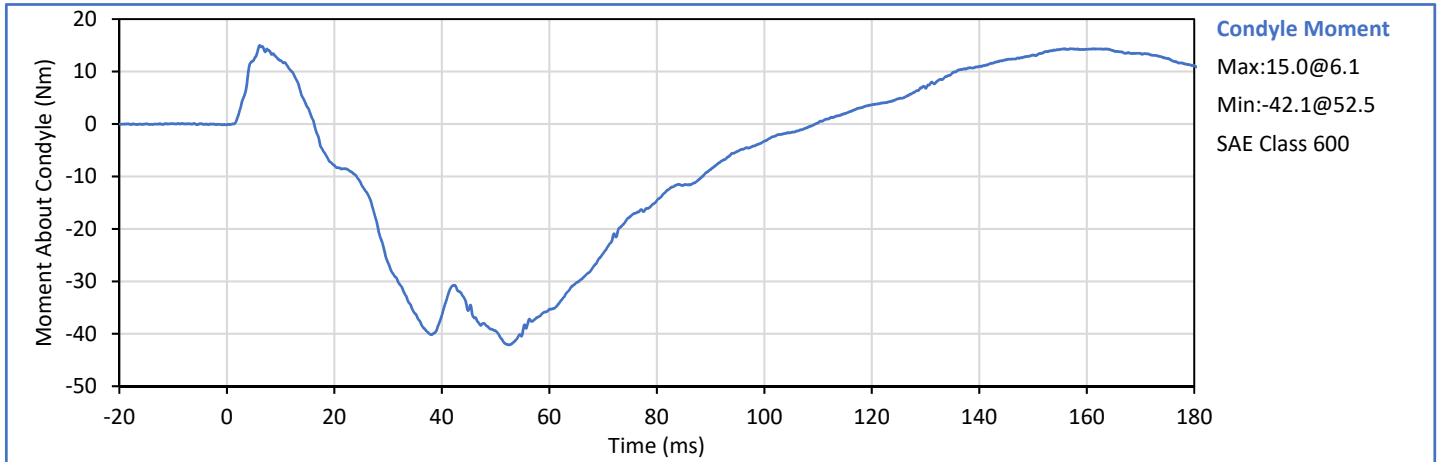
J. Hernandez

Approved By: _____

P. Puzzuto

ATD Serial No.: 299

Test Date: 2018-12-28



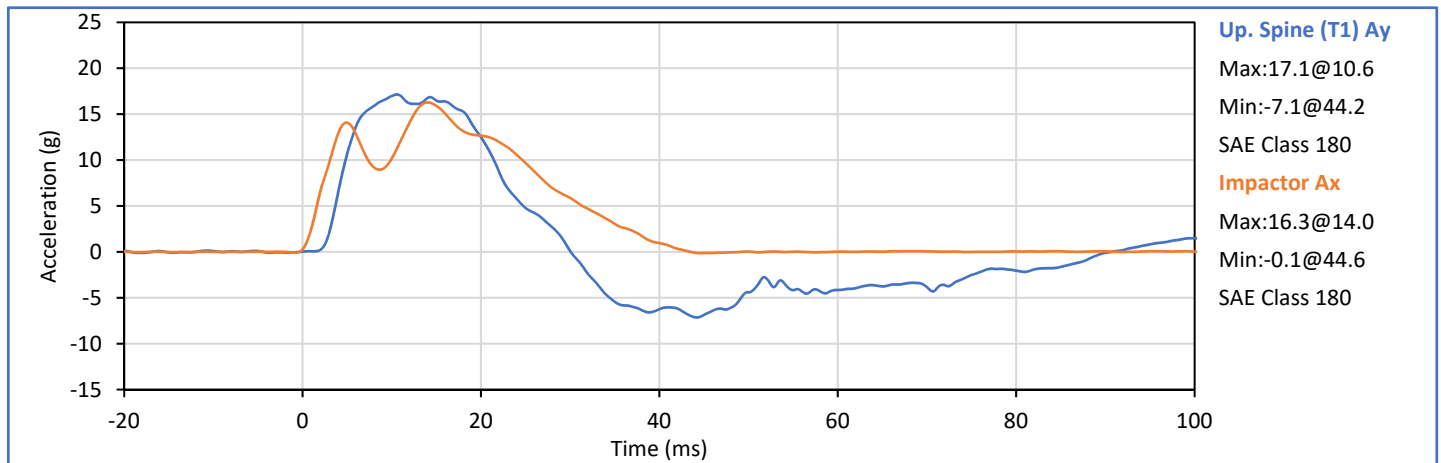
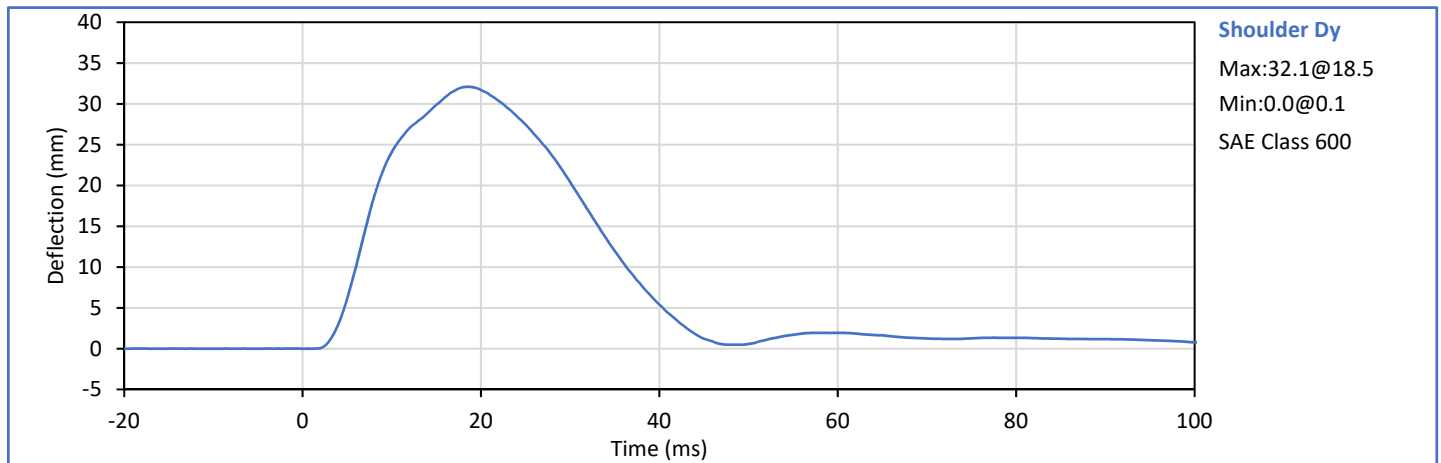


SID-II's Small Side Impact ATD
Shoulder Impact Test

ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.9	Pass
Laboratory Humidity	%	10	70	22	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Shoulder Dy	mm	28.0	37.0	32.1	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	17.1	Pass
Peak Impactor Ax	g	13.0	18.0	16.3	Pass
Overall Test Results					Pass



Technician: _____

J. Hernandez

Approved By: _____

P. Puzzuto

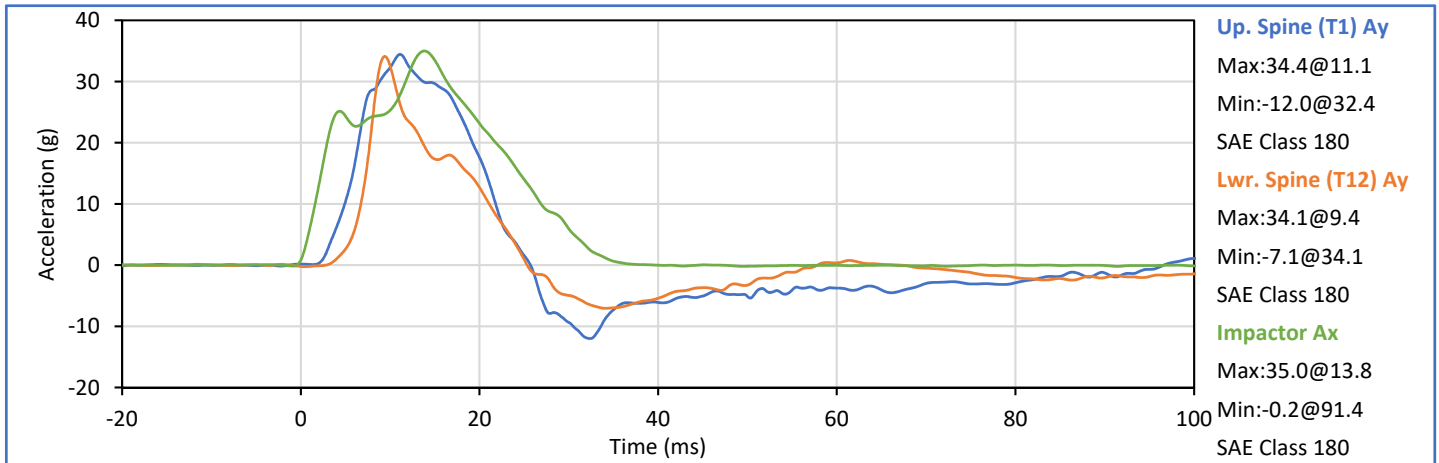
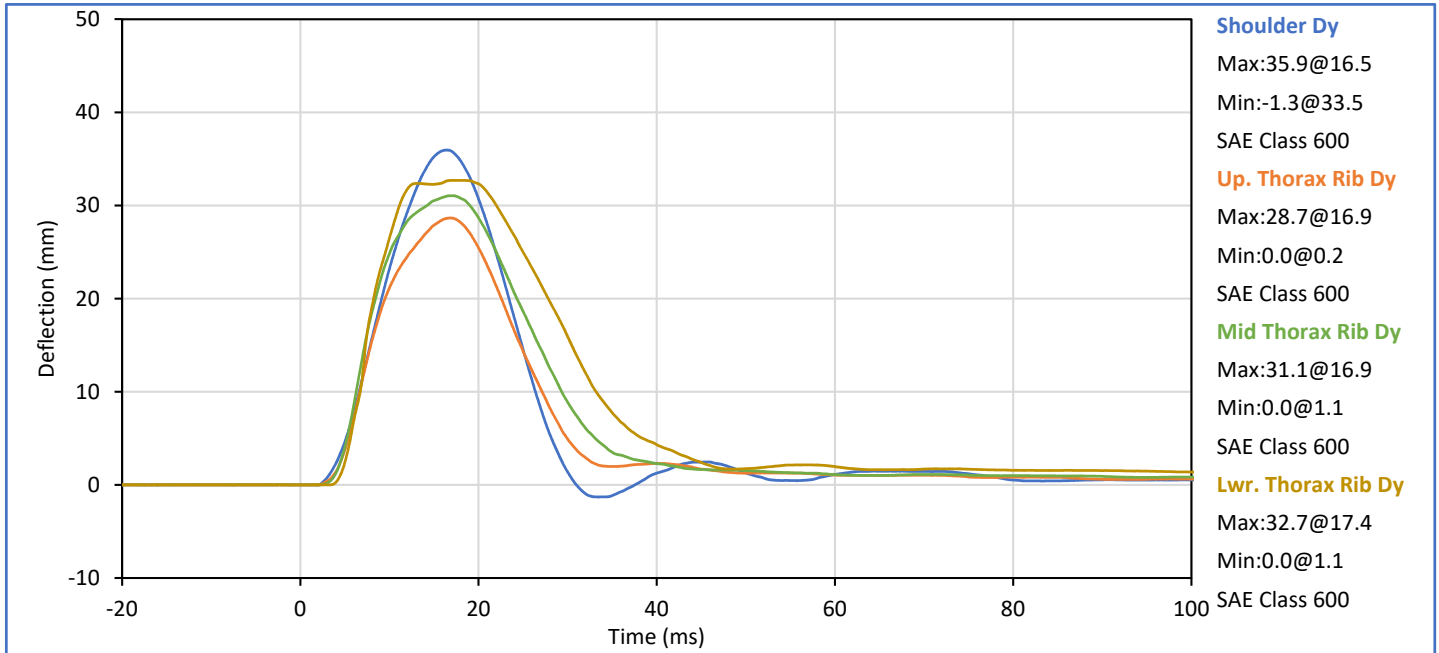


SID-IIs Small Side Impact ATD Thorax (With Arm)

ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.9	Pass
Laboratory Humidity	%	10	70	22	Pass
Impactor Velocity	m/s	6.60	6.80	6.68	Pass
Peak Shoulder Dy	mm	31.0	40.0	35.9	Pass
Peak Upper Rib Dy	mm	25.0	32.0	28.7	Pass
Peak Middle Rib Dy	mm	30.0	36.0	31.1	Pass
Peak Lower Rib Dy	mm	32.0	38.0	32.7	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	34.4	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	34.1	Pass
Peak Impactor Ax	g	30.0	36.0	35.0	Pass
Overall Test Results				Pass	



Technician: J. Hernandez

Approved By: P. Puzzuto

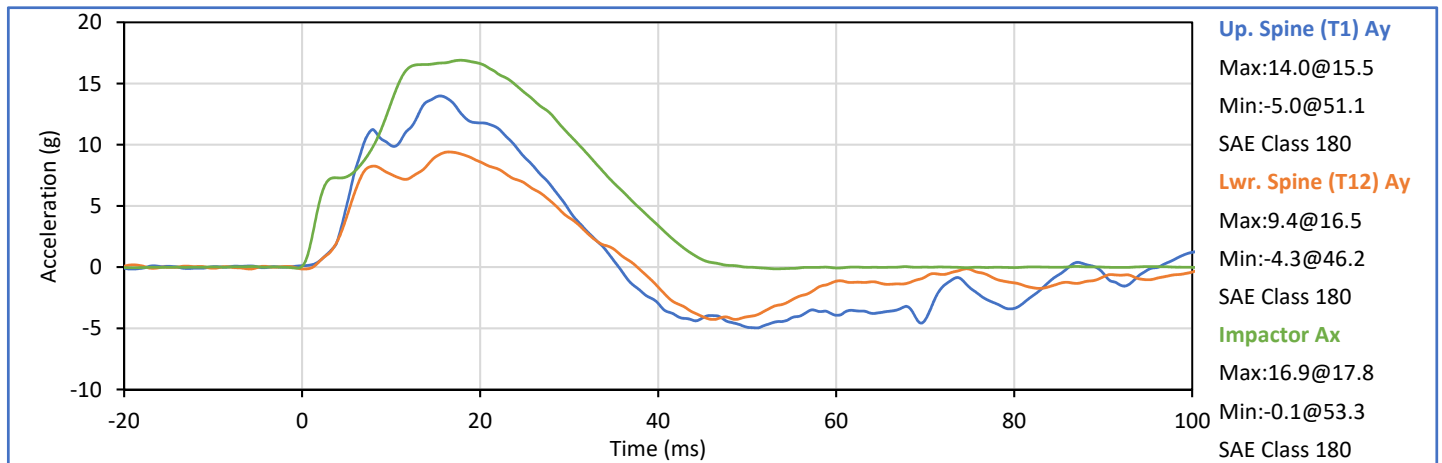
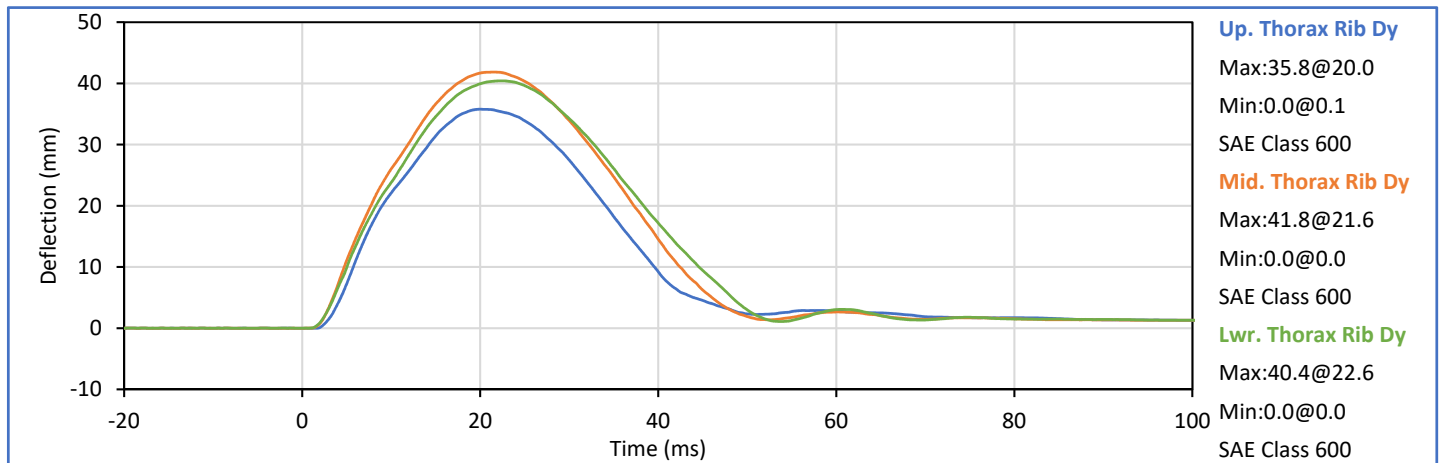


**SID-IIs Small Side Impact ATD
 Thorax (No Arm)**

ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.9	Pass
Laboratory Humidity	%	10	70	22	Pass
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Upper Rib Dy	mm	32.0	40.0	35.8	Pass
Peak Middle Rib Dy	mm	39.0	45.0	41.8	Pass
Peak Lower Rib Dy	mm	35.0	43.0	40.4	Pass
Peak Upper Spine (T1) Ay	g	13.0	17.0	14.0	Pass
Peak Lower Spine (T12) Ay	g	7.0	11.0	9.4	Pass
Peak Impactor Ax	g	14.0	18.0	16.9	Pass
Overall Test Results				Pass	



Technician: J. Hernandez

Approved By: P. Puzzuto

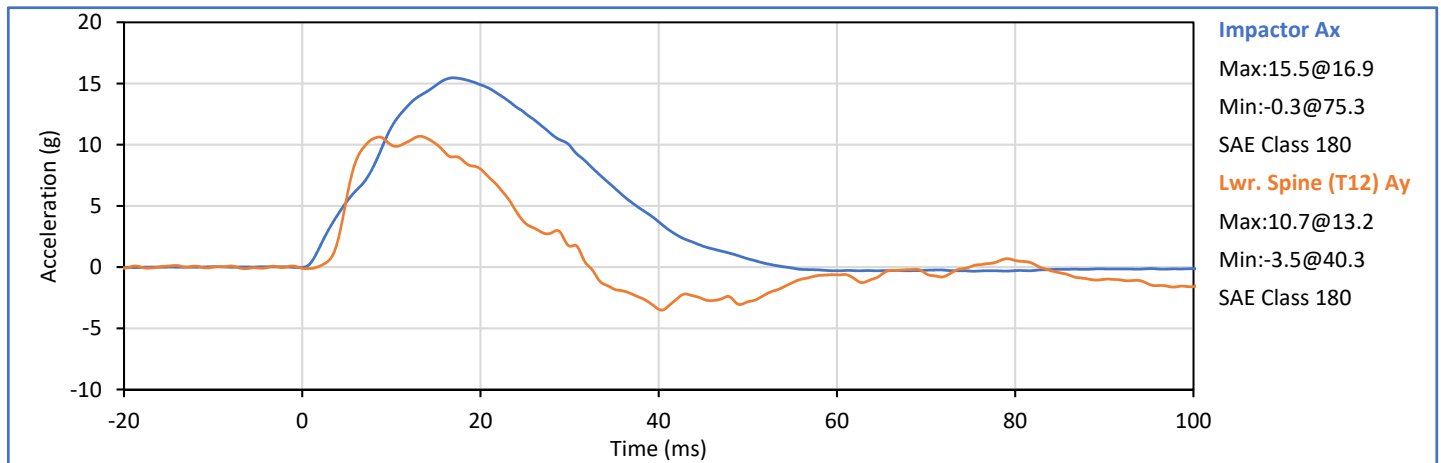
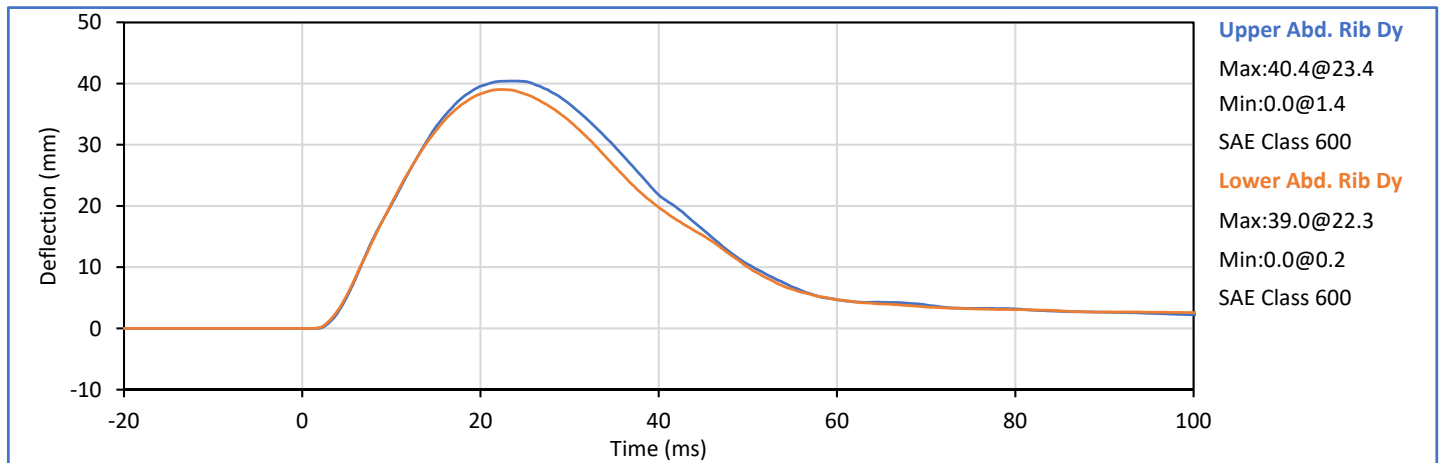


**SID-IIs Small Side Impact ATD
 Abdomen Impact**

ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.9	Pass
Laboratory Humidity	%	10	70	22	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	40.4	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	39.0	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.7	Pass
Peak Impactor Ax	g	12.0	16.0	15.5	Pass
Overall Test Results				Pass	



Technician:
 J. Hernandez

Approved By:
 P. Puzzuto



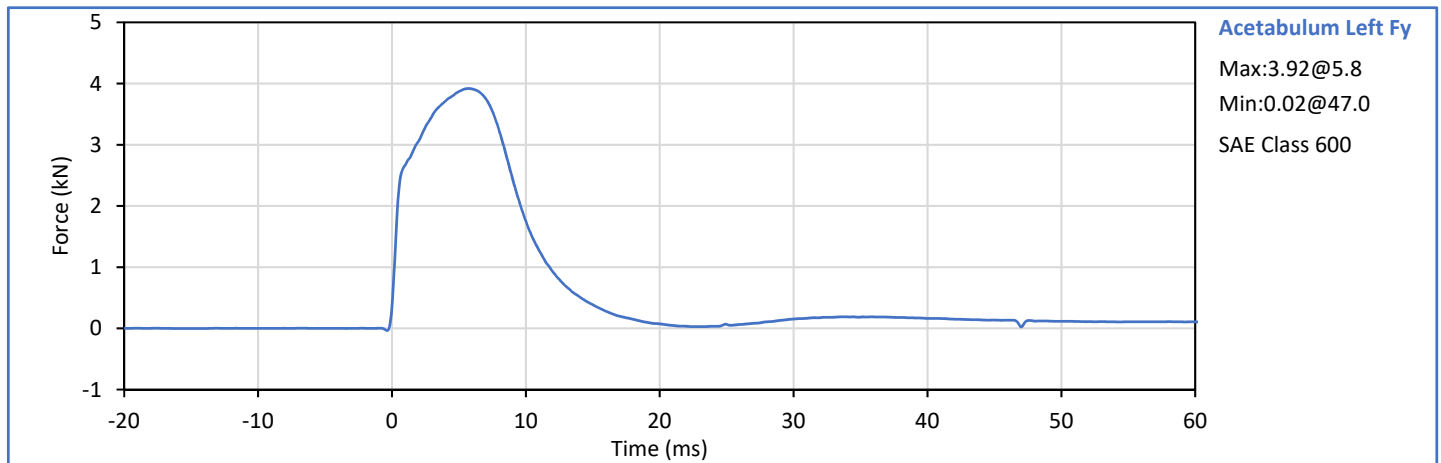
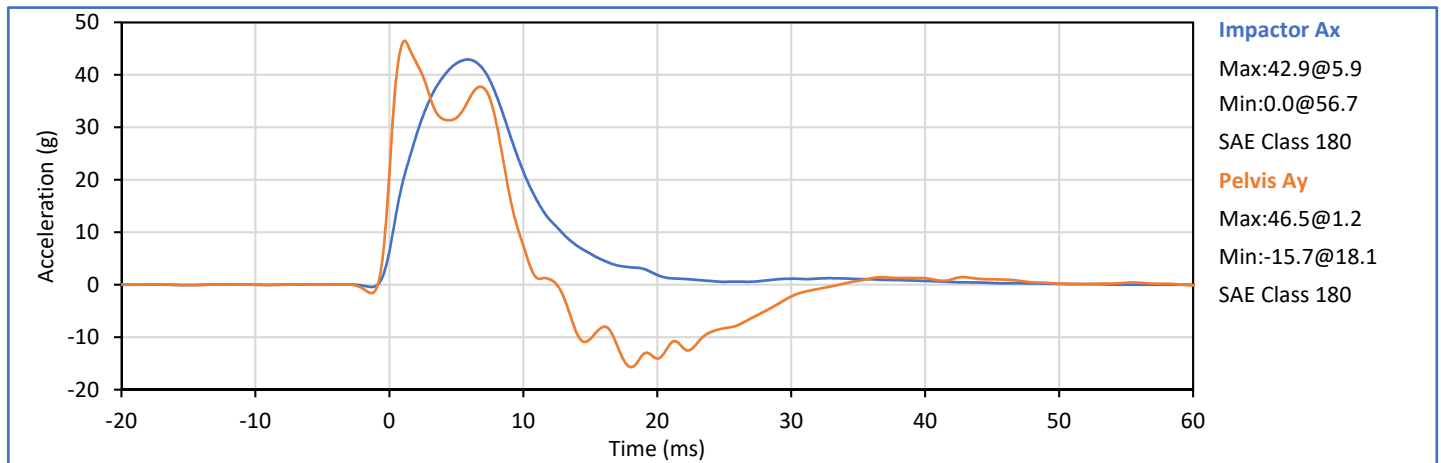
SID-IIs Small Side Impact ATD
Pelvis Acetabulum Impact

ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Humidity	%	10	70	21	Pass
Impactor Velocity	m/s	6.60	6.80	6.63	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.92	Pass
Pelvis Ay after 6ms	g	34.0	42.0	37.7	Pass
Peak Impactor Ax	g	38.0	47.0	42.9	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 11821 (SACO)



Technician: J. Hernandez

Approved By: P. Puzzuto



9270 Holly Road, Adelanto, CA 92301
Tel: +1 760 246 1672 Fax: +1 760 246 8112
Info@karco.com www.karco.com

SID-IIs Small Side Impact ATD
Pelvis Acetabulum Impact

ATD Serial No.: 299

Test Date: 2018-12-28

Pelvis Plug S/N: 11821 (SACO)



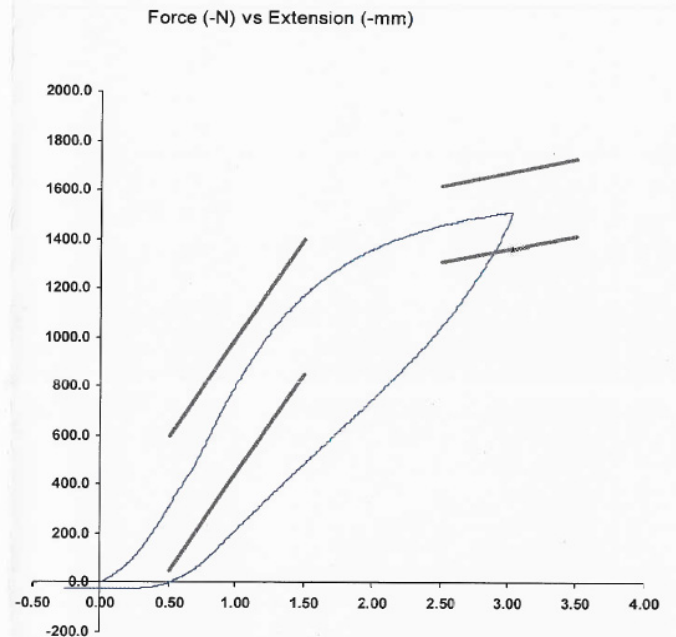
SID-IIs Pelvis Plug Certification Test

Plug S/N 11821
Test Number 5931
Report Number 5947
Test Date 1/23/2018 7:54:14 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	310.45	50.00	600.00
Force @ 1.5 mm (N)	1,172.99	850.00	1,400.00
Force @ 2.5 mm (N)	1,457.19	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,511.28	1,361.00	1,673.00

Testing Machine STM-20 5965542
Load Cell S/N (FI360947), Units (LBS) 1000
Preload Value (-N) 22.24
Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:



Operator

Part Number 180-4450

Template No 107 23-Jan-18
SACO Research

By : DC Date : 1/23/18

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



SID-IIs Small Side Impact ATD
Pelvis Iliac Impact

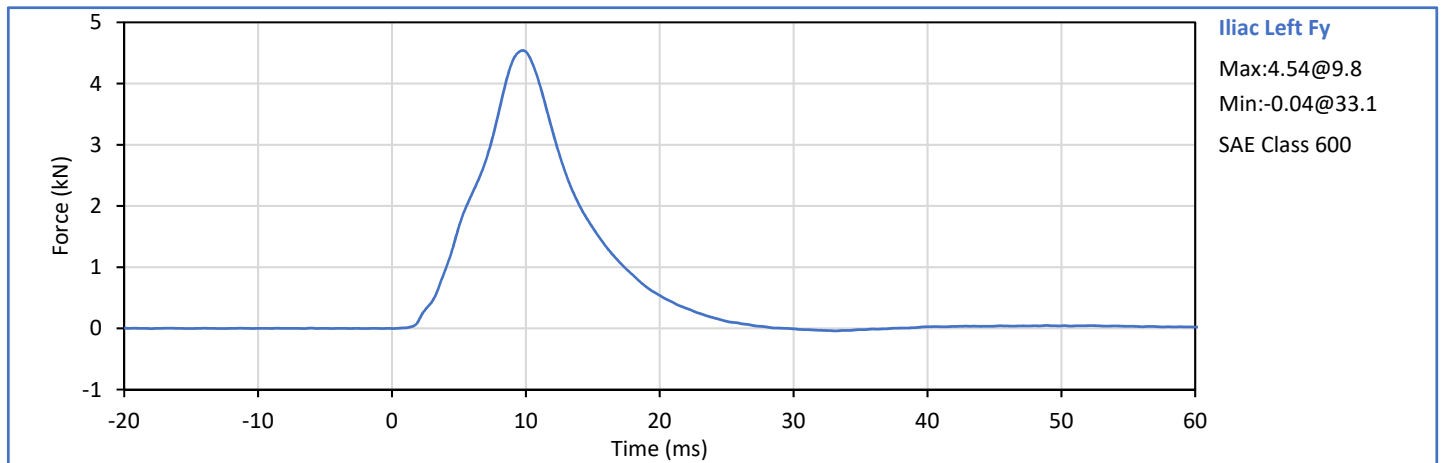
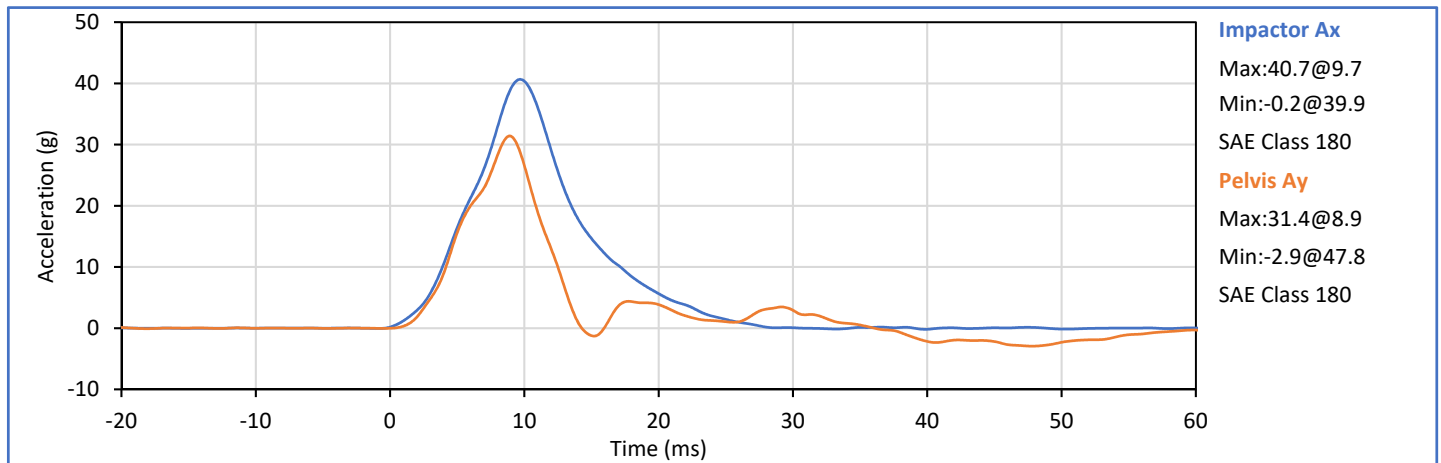
ATD Serial No.: 299

Test Date: 2018-12-28

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	21	Pass
Impactor Velocity	m/s	4.20	4.40	4.37	Pass
Peak Iliac Fy	kN	4.10	5.10	4.54	Pass
Pelvis Ay after 6ms	g	28.0	39.0	31.4	Pass
Peak Impactor Ax	g	36.0	45.0	40.7	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
LEFT SIDE CONFIGURATION



SID-IIs Small Side Impact ATD
External Measurements

ATD Serial No.: 299

Test Date: 2019-02-01

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
A - Sitting Height	mm	772	788	781	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	86	Pass
D - H Point From Seatback	mm	141	151	147	Pass
E - Shoulder Pivot From Backline	mm	97	107	103	Pass
F - Thigh Clearance	mm	119	135	124	Pass
G - Head Breadth	mm	140	148	145	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	184	Pass
J - Head Circumference	mm	541	551	548	Pass
K - Buttock To Knee Length	mm	514	540	525	Pass
L - Popliteal Height	mm	343	369	362	Pass
K - Knee Pivot To Floor Height	mm	392	409	400	Pass
N - Buttock Popliteal Length	mm	416	442	439	Pass
O - Chest Depth W/O Jacket	mm	195	211	201	Pass
P - Foot Length	mm	216	232	223	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	258	Pass
S - Knee Joint To Seatback	mm	477	493	488	Pass
V - Shoulder Width	mm	341	357	352	Pass
W - Foot Width	mm	78	94	88	Pass
Y - Chest Circumference W/Jacket	mm	851	881	869	Pass
Z - Waist Circumference	mm	761	791	772	Pass
			Overall Test Results		Pass

Technician: _____

J. Hernandez

Approved By: _____

P. Puzzuto

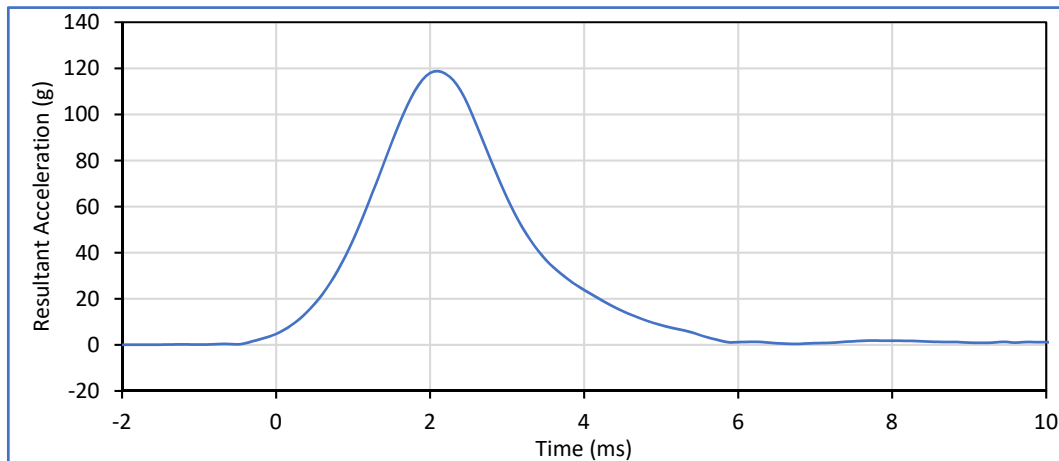


SID-IIs Small Side Impact ATD Head Drop

ATD Serial No.: 299

Test Date: 2019-02-04

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.9	Pass
Laboratory Humidity	%	10	70	33	Pass
Peak Resultant Acceleration	g	115.0	137.0	118.8	Pass
Peak Head Ax	g	-15.0	15.0	-0.9	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	

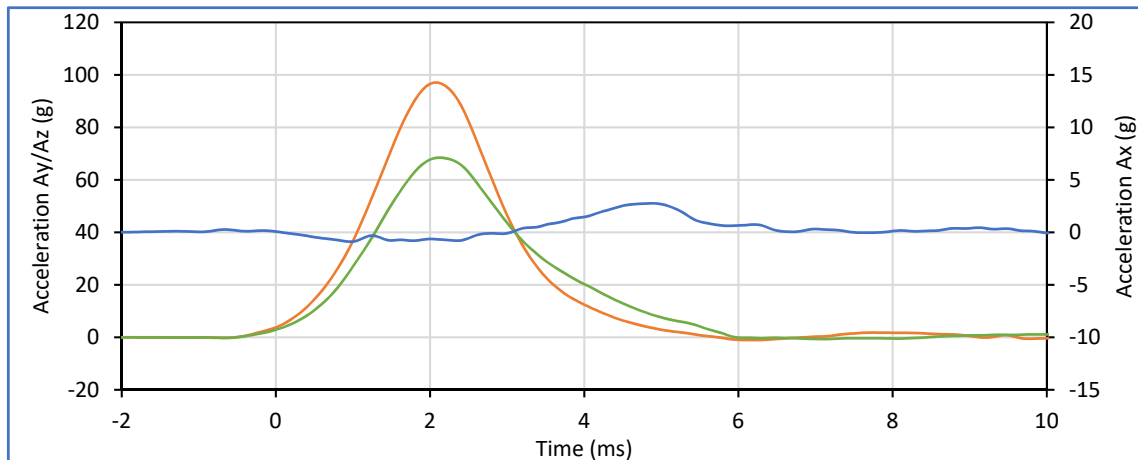


Head Resultant

Max:118.8@2.1

Min:0.4@6.8

SAE Class 1000



Head Ax

Max:2.8@4.9

Min:-0.9@1.0

SAE Class 1000

Head Ay

Max:97.1@2.1

Min:-1.1@6.2

SAE Class 1000

Head Az

Max:68.4@2.1

Min:-0.7@7.1

SAE Class 1000

Technician:

J. Hernandez

Approved By:

P. Puzzuto

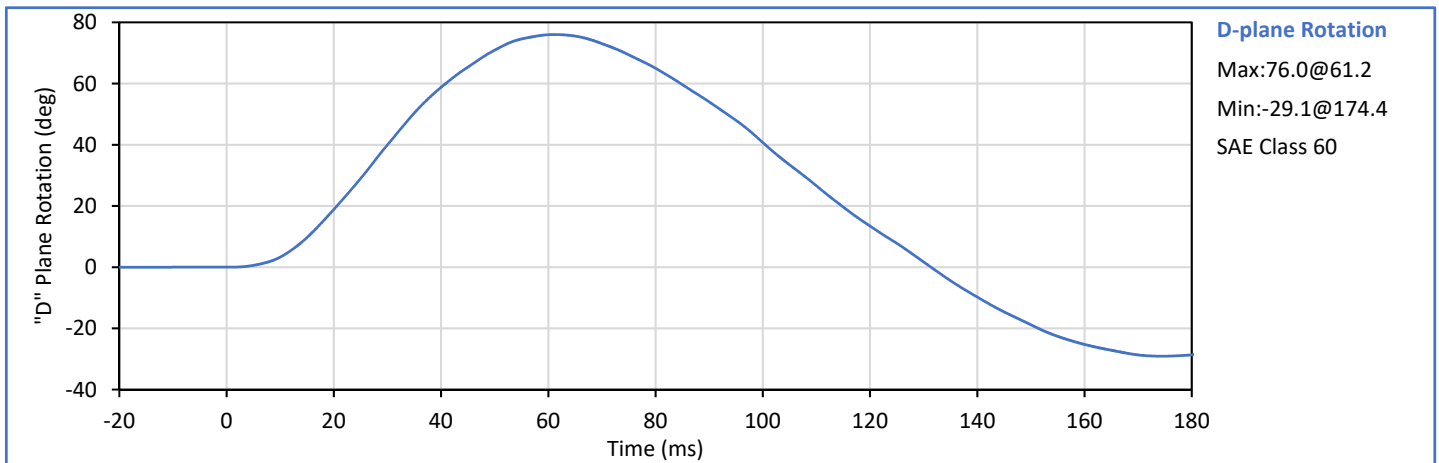
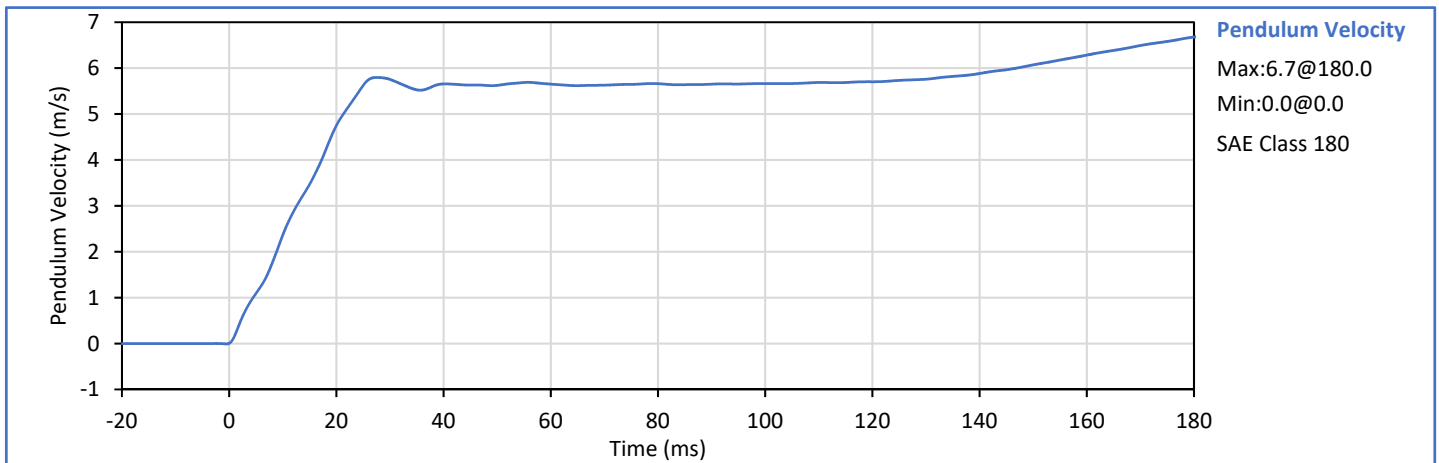


SID-IIs Small Side Impact ATD Neck Flexion

ATD Serial No.: 299

Test Date: 2019-02-05

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	29	Pass
Pendulum Velocity	m/s	5.51	5.63	5.52	Pass
Pendulum Decel at 10 ms	m/s	2.20	2.80	2.36	Pass
Pendulum Decel at 15 ms	m/s	3.30	4.10	3.47	Pass
Pendulum Decel at 20 ms	m/s	4.40	5.40	4.75	Pass
Pendulum Decel at 25 ms	m/s	5.40	6.10	5.62	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	76.0	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	61.2	Pass
Peak Occ. Condyle Moment	Nm	-44.0	-36.0	-42.5	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	111.7	Pass
Overall Test Results				Pass	

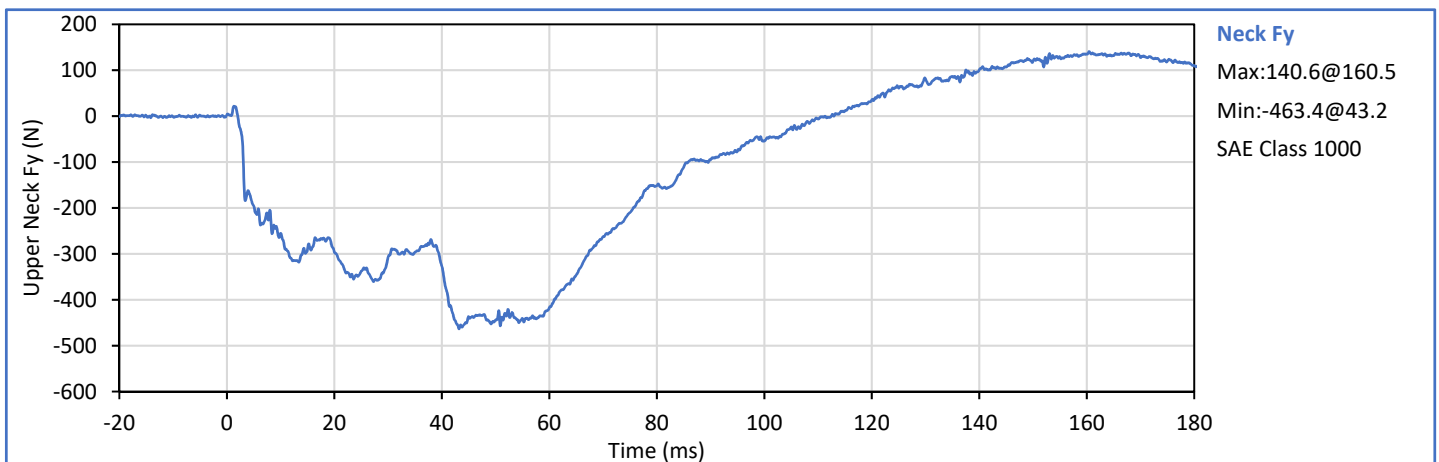
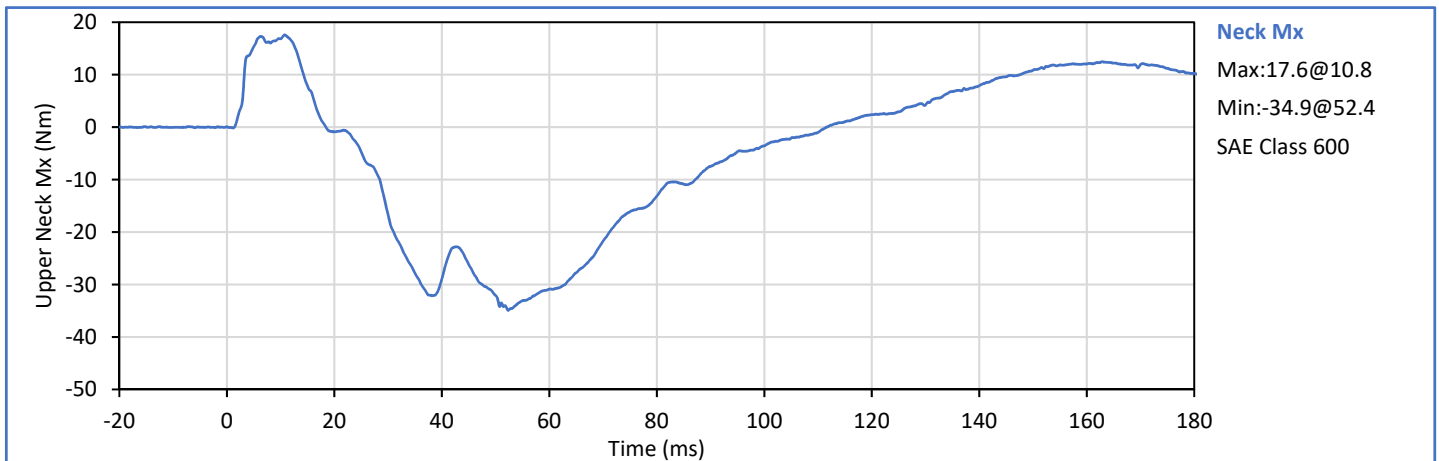
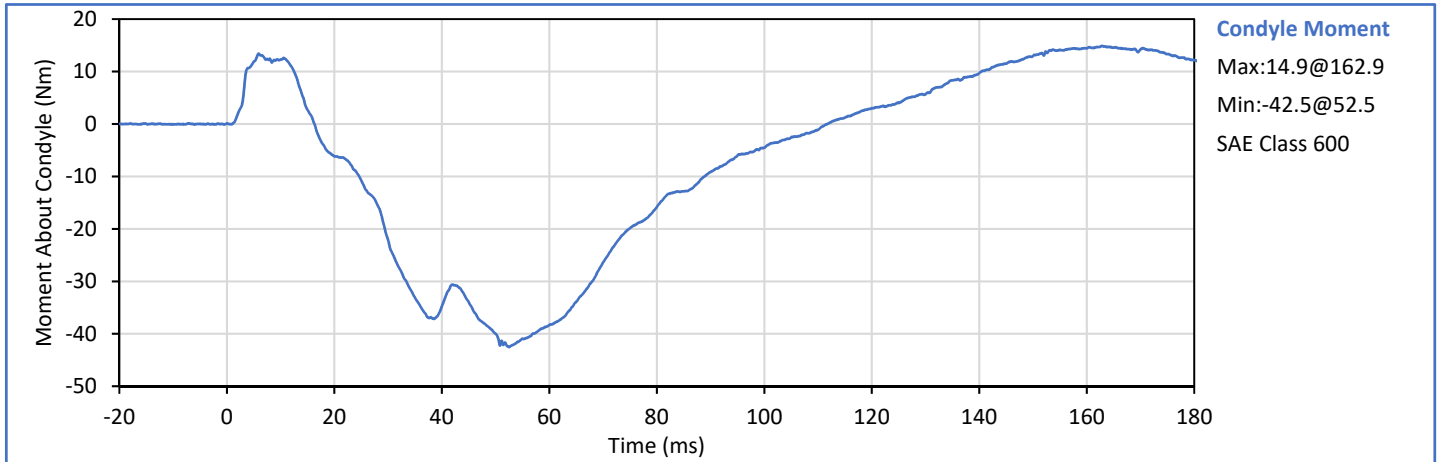


Technician: J. Hernandez

Approved By: P. Puzzuto

ATD Serial No.: 299

Test Date: 2019-02-05



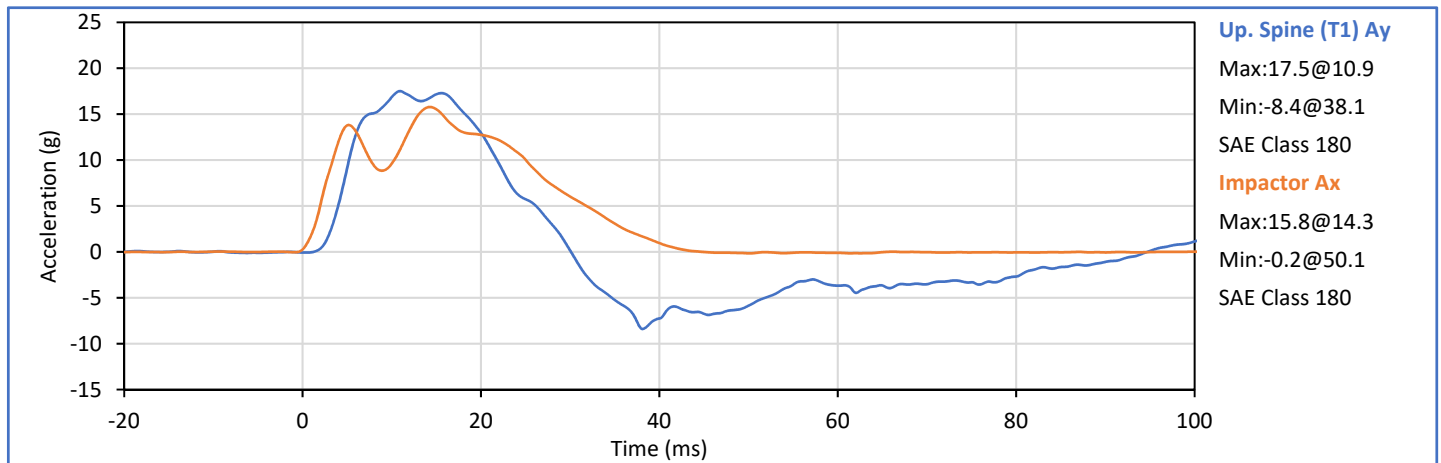
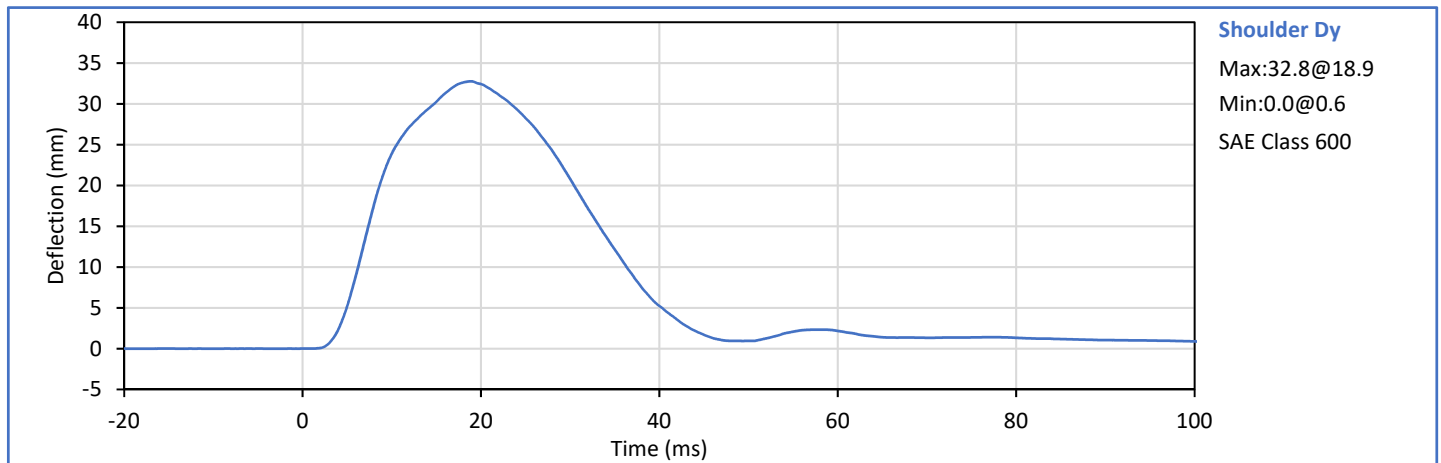


SID-IIs Small Side Impact ATD
Shoulder Impact Test

ATD Serial No.: 299

Test Date: 2019-02-01

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Humidity	%	10	70	39	Pass
Impactor Velocity	m/s	4.20	4.40	4.29	Pass
Peak Shoulder Dy	mm	28.0	37.0	32.8	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	17.5	Pass
Peak Impactor Ax	g	13.0	18.0	15.8	Pass
Overall Test Results					Pass



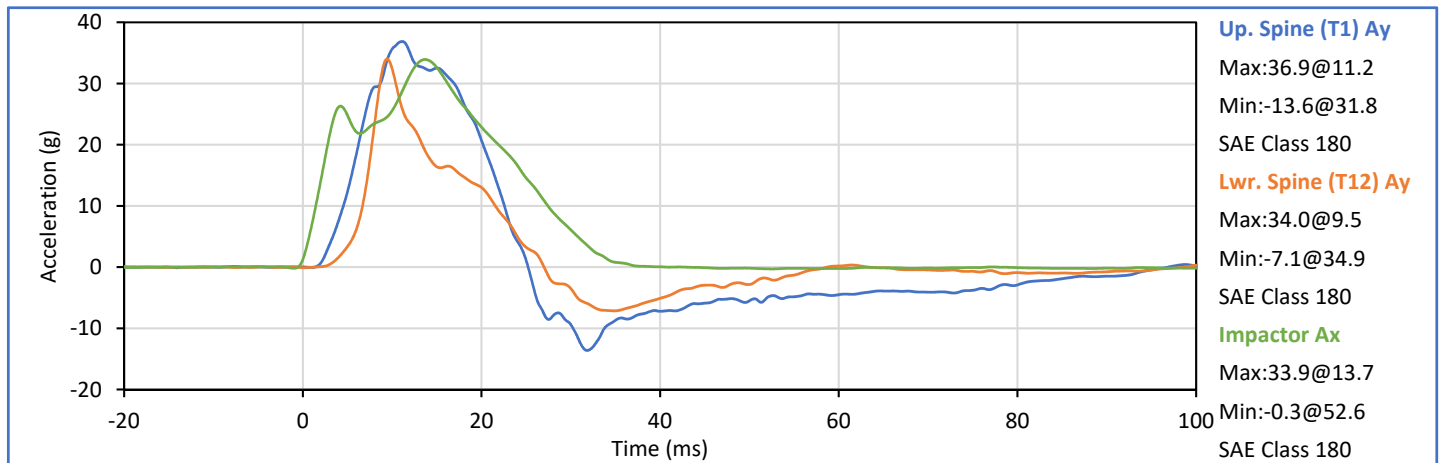
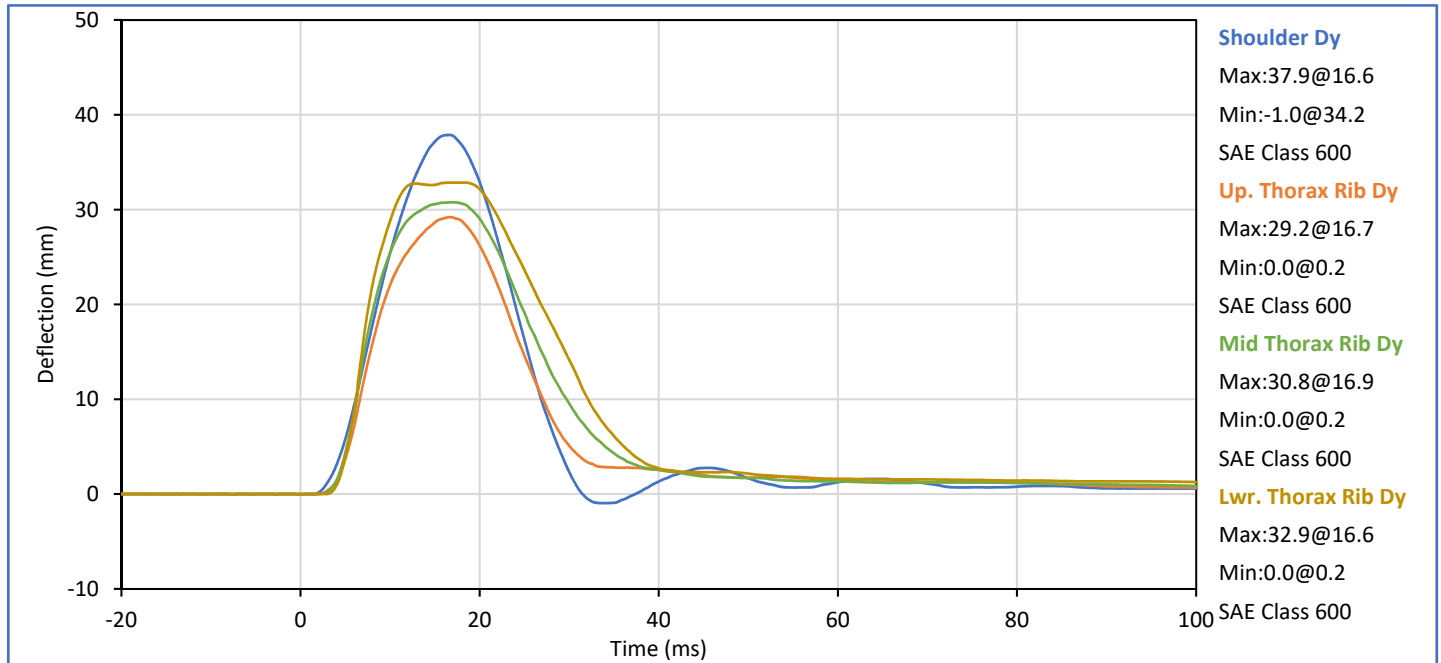
Technician: J. Hernandez

Approved By: P. Puzzuto

ATD Serial No.: 299

Test Date: 2019-02-02

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Humidity	%	10	70	35	Pass
Impactor Velocity	m/s	6.60	6.80	6.62	Pass
Peak Shoulder Dy	mm	31.0	40.0	37.9	Pass
Peak Upper Rib Dy	mm	25.0	32.0	29.2	Pass
Peak Middle Rib Dy	mm	30.0	36.0	30.8	Pass
Peak Lower Rib Dy	mm	32.0	38.0	32.9	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	36.9	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	34.0	Pass
Peak Impactor Ax	g	30.0	36.0	33.9	Pass
Overall Test Results					Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

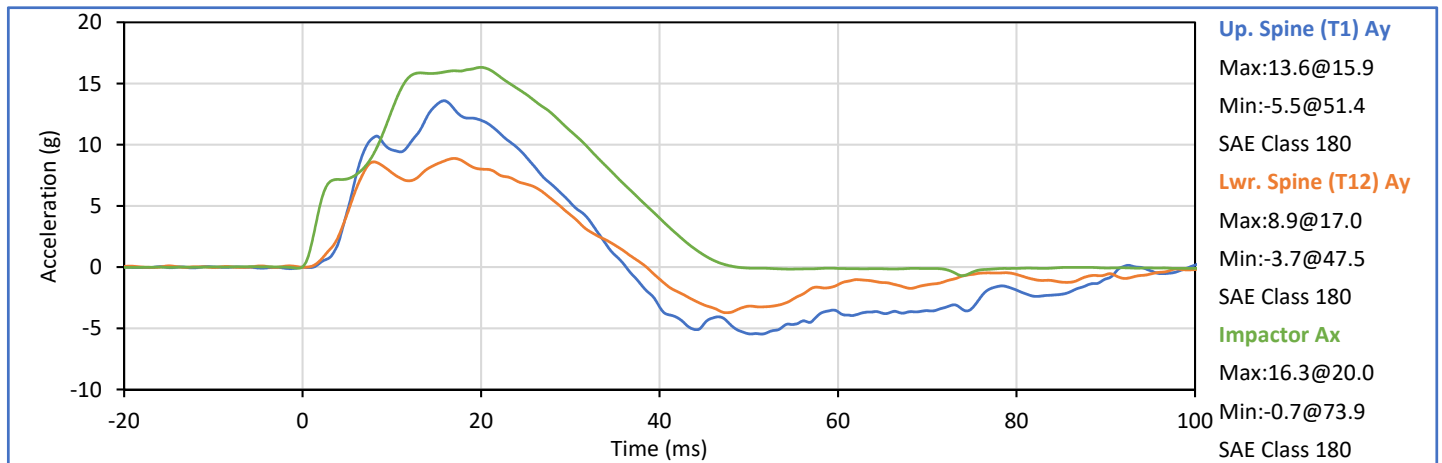
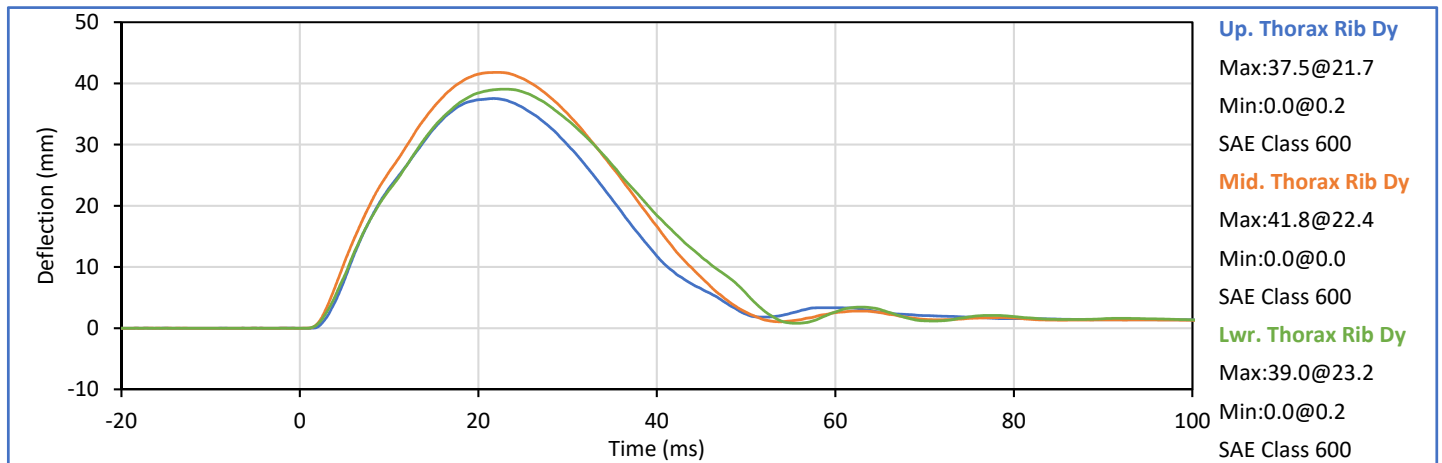


**SID-IIs Small Side Impact ATD
 Thorax (No Arm)**

ATD Serial No.: 299

Test Date: 2019-02-01

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Humidity	%	10	70	35	Pass
Impactor Velocity	m/s	4.20	4.40	4.27	Pass
Peak Upper Rib Dy	mm	32.0	40.0	37.5	Pass
Peak Middle Rib Dy	mm	39.0	45.0	41.8	Pass
Peak Lower Rib Dy	mm	35.0	43.0	39.0	Pass
Peak Upper Spine (T1) Ay	g	13.0	17.0	13.6	Pass
Peak Lower Spine (T12) Ay	g	7.0	11.0	8.9	Pass
Peak Impactor Ax	g	14.0	18.0	16.3	Pass
Overall Test Results					Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

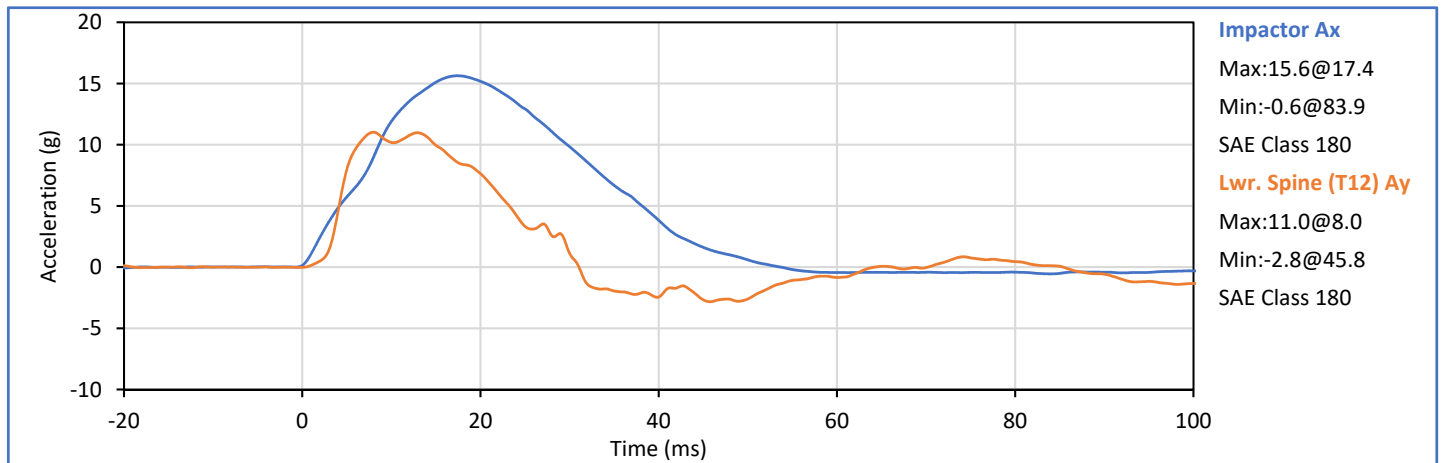
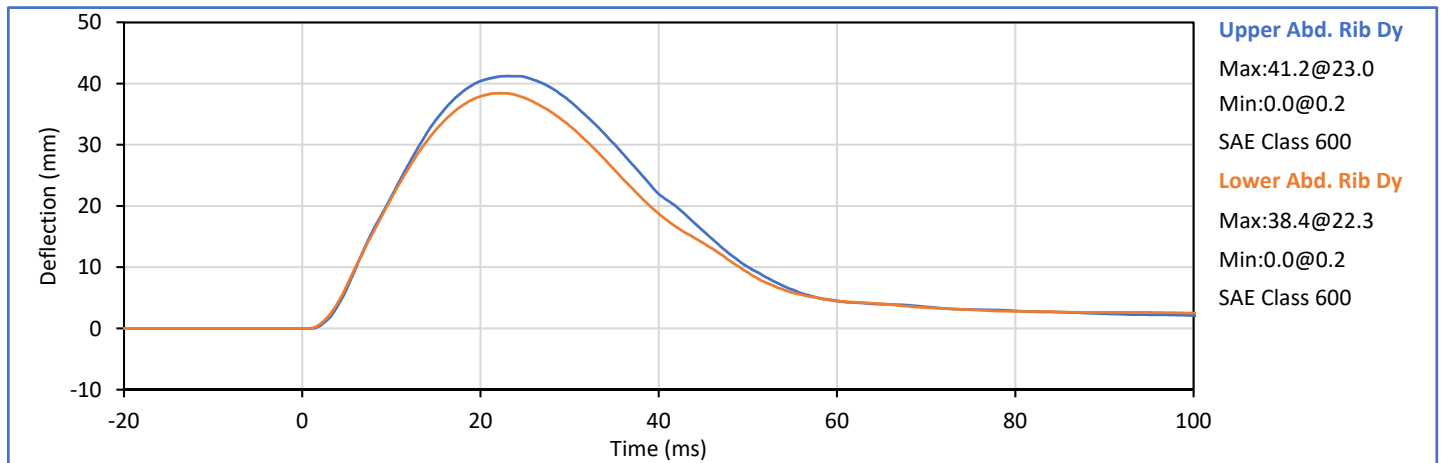


SID-II's Small Side Impact ATD
Abdomen Impact

ATD Serial No.: 299

Test Date: 2019-02-02

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	41.2	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	38.4	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	11.0	Pass
Peak Impactor Ax	g	12.0	16.0	15.6	Pass
Overall Test Results				Pass	Pass



Technician: _____

J. Hernandez

Approved By: _____

P. Puzzuto



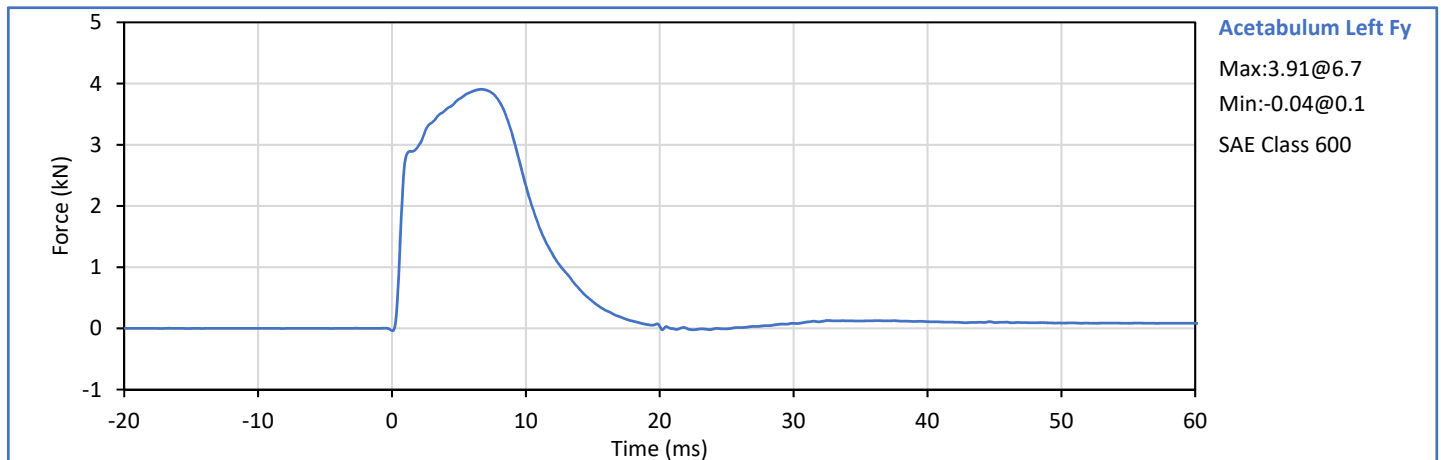
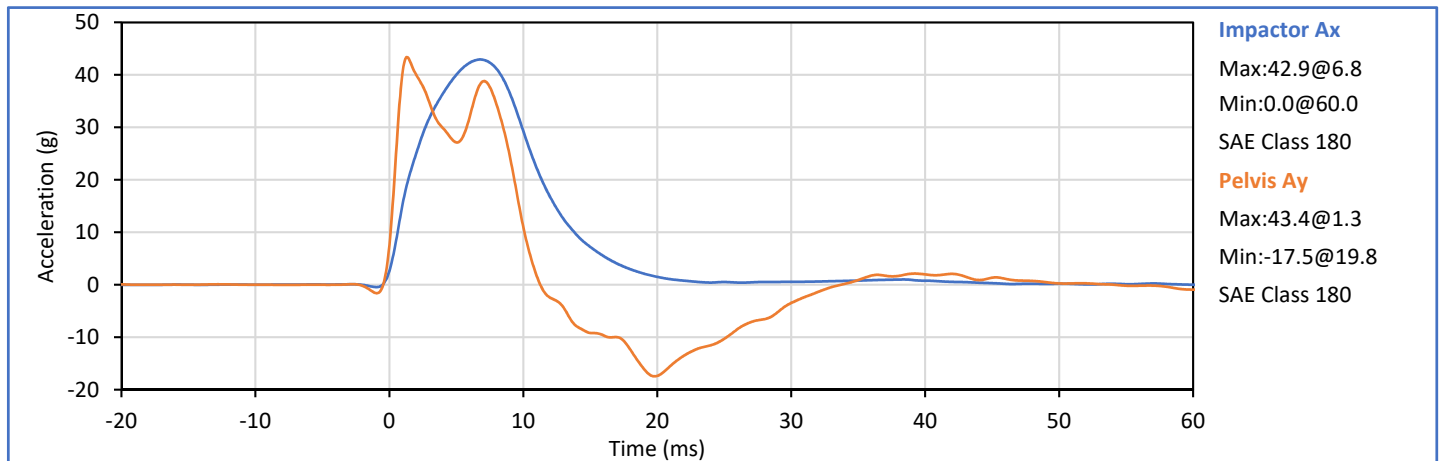
SID-IIs Small Side Impact ATD
Pelvis Acetabulum Impact

ATD Serial No.: 299

Test Date: 2019-02-01

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Humidity	%	10	70	35	Pass
Impactor Velocity	m/s	6.60	6.80	6.65	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.91	Pass
Pelvis Ay after 6ms	g	34.0	42.0	38.8	Pass
Peak Impactor Ax	g	38.0	47.0	42.9	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 11501 (SACO)



Technician: J. Hernandez

Approved By: P. Puzzuto



9270 Holly Road, Adelanto, CA 92301
Tel: +1 760 246 1672 Fax: +1 760 246 8112
Info@karco.com www.karco.com

SID-IIs Small Side Impact ATD Pelvis Acetabulum Impact

ATD Serial No.: 299

Test Date: 2019-02-01

Pelvis Plug S/N: 11501 (SACO)



SID-IIs Pelvis Plug Certification Test

Plug S/N 11501

Test Number 3005

Report Number 3002

Test Date 8/31/2016 10:43:13 AM

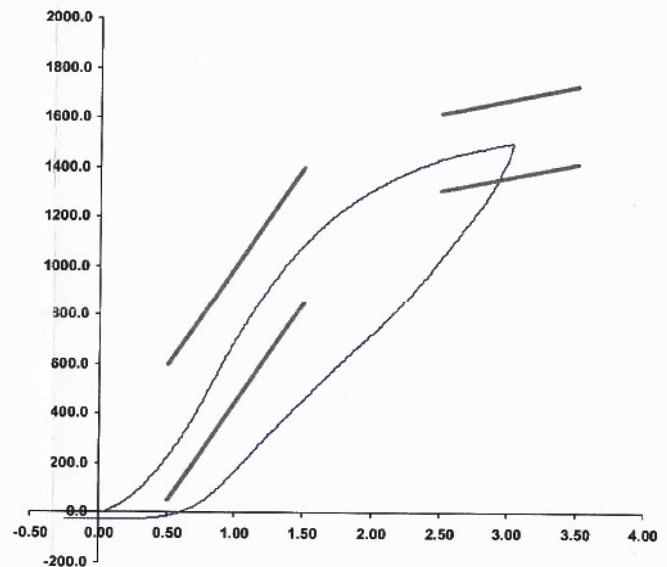
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	224.41	50.00	600.00
Force @ 1.5 mm (N)	1,085.97	850.00	1,400.00
Force @ 2.5 mm (N)	1,433.61	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,496.07	1,361.00	1,673.00

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 31-Aug-16
SACO Research

By: DC Date: 8/31/16

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



SID-IIs Small Side Impact ATD
Pelvis Iliac Impact

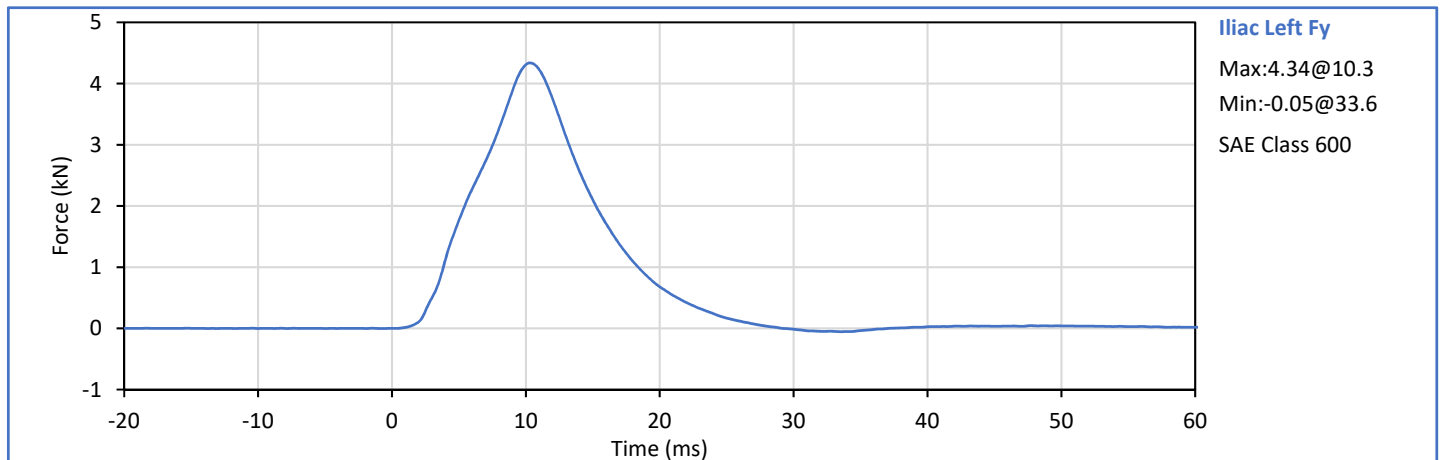
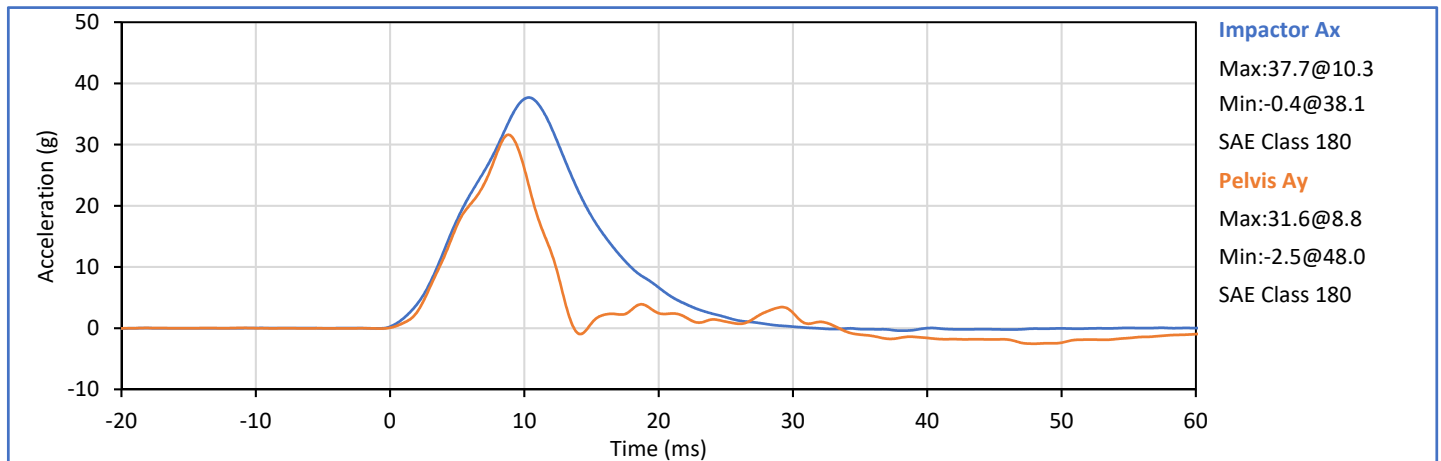
ATD Serial No.: 299

Test Date: 2019-02-02

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Humidity	%	10	70	35	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Iliac Fy	kN	4.10	5.10	4.34	Pass
Pelvis Ay after 6ms	g	28.0	39.0	31.6	Pass
Peak Impactor Ax	g	36.0	45.0	37.7	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	ARS7571	DTS	ARS PRO-8k (2000Hz)	2018-06-09
Head Rotation Rate Y	ARS7316	DTS	ARS PRO-8k (2000Hz)	2018-06-09
Head Rotation Rate Z	ARS7330	DTS	ARS PRO-8k (2000Hz)	2018-06-09

✖
✖
✖

Table 2 - Vehicle Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Vehicle CG Ax	A247326	MSI	52F-2000	2019-06-21
Vehicle CG Ay	A265884	MSI	52F-2000	2019-07-11
Vehicle CG Az	A265900	MSI	52F-2000	2019-07-11
Left Floor Sill Ay	A224526	MSI	52F-2000	2019-09-28
A-Pillar Sill Ay	10393	Endevco	757F-2k	2019-09-04
A-Pillar Low Ay	10437	Endevco	757F-2k	2019-09-04
A-Pillar Mid Ay	10378	Endevco	757F-2k	2019-09-04
B-Pillar Sill Ay	10245	Endevco	757F-2k	2019-03-08
B-Pillar Low Ay	10117	Endevco	757F-2k	2019-02-12
B-Pillar Mid Ay	10247	Endevco	757F-2k	2019-03-08
Driver Seat Track at H-Point Ay	A248840	MSI	52F-2000	2019-09-15
Engine Top Ax	10089	Endevco	757F-2k	2019-02-12
Engine Top Ay	10388	Endevco	757F-2k	2019-09-05
Firewall Ay	A212050	MSI	52F-2000	2019-10-01
Right Roof Ay	A248860	MSI	52F-2000	2019-09-15
Right Floor Sill Ay	10376	Endevco	757F-2k	2019-09-05
Rear Floorpan Ax	A254913	MSI	52F-2000	2019-06-18
Rear Floorpan Ay	A254861	MSI	52F-2000	2019-06-19

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	2109-05-02
Load Cell Pole Barrier #2 Force Y	132304A	Interface	1220-FS	2109-05-02
Load Cell Pole Barrier #3 Force Y	19477	Interface	1220-FS	2109-05-02
Load Cell Pole Barrier #4 Force Y	19325	Interface	1220-FS	2109-05-02
Load Cell Pole Barrier #5 Force Y	131827A	Interface	1220-FS	2109-05-02
Load Cell Pole Barrier #6 Force Y	132302A	Interface	1220-FS	2109-05-02
Load Cell Pole Barrier #7 Force Y	19267	Interface	1220-FS	2109-05-02
Load Cell Pole Barrier #8 Force Y	19321	Interface	1220-FS	2109-05-02