

REPORT NUMBER: NCAP-KAR-20-027

**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

**NISSAN MOTOR CO., LTD.
2020 NISSAN KICKS 5-DOOR SUV**

NHTSA NUMBER: O20205202

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



OCTOBER 15, 2020

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
1200 NEW JERSEY AVE, SE
ROOM W43-410
WASHINGTON, DC 20590**

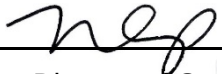
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Approval Date: _____ October 15, 2020 _____

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: _____

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15. Supplementary Notes																																																							
16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2020 Nissan Kicks 5-door SUV in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The test was conducted at the Applus+ IDIADA KARCO Engineering, LLC. facility in Adelanto, California on September 29, 2020. The impact velocity of the vehicle was 56.33 km/h and the ambient temperature at the barrier face at the time of impact was 28.9°C. The target vehicle's post-test maximum crush was 476 mm at the vehicle's centerline. The test vehicle's performance is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Measurement Description</th><th rowspan="2">Units</th><th colspan="2">Driver ATD</th><th colspan="2">Passenger ATD</th></tr> <tr> <th>Threshold</th><th>Result</th><th>Threshold</th><th>Result</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td><td>N/A</td><td>700</td><td>191.1</td><td>700</td><td>325.9</td></tr> <tr> <td>Maximum Chest Compression</td><td>mm</td><td>63</td><td>-25</td><td>52</td><td>-16</td></tr> <tr> <td>Nij</td><td>N/A</td><td>1</td><td>0.32</td><td>1</td><td>0.79</td></tr> <tr> <td>Neck Tension</td><td>N</td><td>4170</td><td>1661.8</td><td>2620</td><td>1745.9</td></tr> <tr> <td>Neck Compression</td><td>N</td><td>4000</td><td>-120.8</td><td>2520</td><td>-612.7</td></tr> <tr> <td>Left Femur Force</td><td>N</td><td>10000</td><td>-1525.2</td><td>6805</td><td>-1646.2</td></tr> <tr> <td>Right Femur Force</td><td>N</td><td>10000</td><td>-1386.8</td><td>6805</td><td>-931.9</td></tr> </tbody> </table>				Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC ₁₅)	N/A	700	191.1	700	325.9	Maximum Chest Compression	mm	63	-25	52	-16	Nij	N/A	1	0.32	1	0.79	Neck Tension	N	4170	1661.8	2620	1745.9	Neck Compression	N	4000	-120.8	2520	-612.7	Left Femur Force	N	10000	-1525.2	6805	-1646.2	Right Femur Force	N	10000	-1386.8	6805	-931.9
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17. Key Words 56.3 km/h (35 mph) Full Frontal Rigid Barrier Impact Test New Car Assessment Program (NCAP)		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division 1200 New Jersey Ave., SE Washington, DC 20590																																																					
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SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

This 56.3 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program, sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number 693JJ919D000004. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Procedure for NCAP Full Frontal Rigid Barrier Impact Testing.

SUMMARY

A load cell barrier consisting of 176 load cells was impacted by a 2020 Nissan Kicks 5-door SUV at a velocity of 56.33 km/h. The test was performed at Applus+ IDIADA KARCO Engineering, LLC. on September 29, 2020. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

One (1) real-time cameras and sixteen (16) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet 6 of this report.

One Part 572E 50th percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O 5th percentile female ATD was placed in the right-front passenger seating position according to dummy placement instructions specified in the Laboratory Procedure for NCAP Full Frontal Rigid Barrier Impact Testing.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck force transducers, right / left femur load cells, and lower leg instrumentation.

The driver (position 1) ATD (Serial No. 360) and the right-front passenger (position 2) ATD (Serial No. 141) were qualified prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 102 channels of dummy and vehicle response data were recorded on an on-board data acquisition system. Appendix B contains the dummy response data traces.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the test vehicle was 476 mm at the vehicle's centerline. Both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: the driver ATD's head contacted the frontal airbag and headrest. The upper torso contacted the frontal airbag. Both the left and right knees contacted the knee airbag.

The passenger's visible contact points were as follows: the passenger ATD's head contacted the frontal airbag and headrest. The upper torso contacted the frontal airbag. Both the left and right knees contacted the knee airbag.

The occupant data is summarized below:

ATD Position	HIC ₁₅	Nij	Neck Tension (N)	Neck Comp. (N)	3ms Chest Clip (g)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)
Driver (50th Male)	191.1	0.32	1661.8	-120.8	45	-25	-1525.2	-1386.8
Passenger (5th Female)	325.9	0.79	1745.9	-612.7	55	-16	-1646.2	-931.9

GENERAL COMMENTS

- Channel Failure – Driver Right Foot Fore AX
- Channel Failure – Engine Top AX, Channel Failed at 36.7ms
- The driver shoulder and lap belt force was not installed
- The passenger shoulder and lap belt force was not installed
- Load cell "0913" Barrier MY recorded questionable data
- Load cell "0803" Barrier FX, channel failed resulting in no data collected
- Load cell "0112" Barrier FX, MY, and MZ channels failed resulting in no data collected
- Load cell "0116" Barrier FX, MY, and MZ channels failed resulting in no data collected

SECTION 2

OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

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: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	O20205202
Model Year	2020
Make	Nissan
Model	Kicks
Body Style	5-Door SUV
VIN	3N1CP5BV3LL531122
Body Color	Brilliant Silver
Odometer Reading (km / mi)	156/97
Engine Displacement (L)	1.6
Type / No. of Cylinders	4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	3
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
Automatic Door Locks (ADLs)	Yes

Traction Control System	Yes
Power Steering	Yes
Power Window Auto-Reverse	Yes
Driver Frontal 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
Front Pass. Frontal Airbag	Yes
Front Pass. Curtain Airbag	Yes
Front Pass. Head/Torso Airbag	No
Front Pass. Torso Airbag	No
Front Pass. Torso/Pelvis Airbag	Yes
Front Pass. Pelvis Airbag	No
Front Pass. Knee Airbag	Yes
Driver Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Front Pass. Seat Belt Pretensioner	Yes
Front Pass. Load Limiter	Yes
Other Safety Restraint	No

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	Jul-20

GVWR (kg)	1640
GAWR Front (kg)	870
GAWR Rear (kg)	770

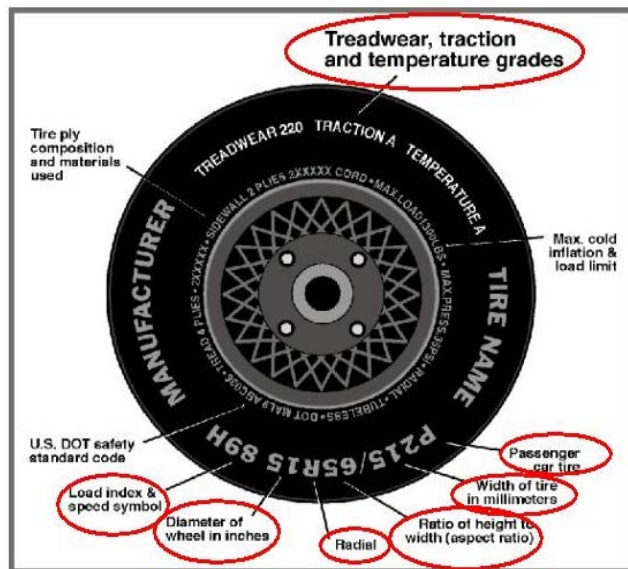
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Type of Seats	Bucket	Bench			
Designated Seating Capacity	2	3		5	
Capacity Weight (VCW) (kg)				385.0	A
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				44.8	A-B

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
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VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	220	220
Cold Pressure (kPa)	220	220
Recommended Tire Size	P205/60 R16	P205/60 R16
Tire Size on Vehicle	P205/60 R16	P205/60 R16
Tire Manufacturer	Firestone	Firestone
Tire Model	FT140	FT140
Treadwear	500	500
Traction	A	A
Temperature Grades	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	92 H	92 H
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	DOT V6XW FTO 1120	DOT V6XW FTO 1120
DOT Safety Code Right	DOT V6XW FTO 1120	DOT V6XW FTO 1120

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

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UWV)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	369.0	225.0		410.5	312.0	
Right	kg	375.5	256.0		394.0	287.5	
Ratio	%	60.8%	39.2%	100.0%	57.3%	42.7%	100.0%
Total	kg	744.5	481.0	1225.5	804.5	599.5	1404.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UWV)	kg	1225.5	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	44.8	C
Calculated Vehicle Target Weight (TVTW)	kg	1411.3	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	702	711	713	726	1034
As Tested	mm	687	689	681	691	1125
Post-Test	mm	690	710	674	694	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheelbase	mm	2635
Total Vehicle Length at Left Side	mm	3662
Total Vehicle Length at Centerline	mm	4292
Total Vehicle Length at Right Side	mm	3662
Weight of Ballast in Cargo Area	kg	81.0
Weight of Vehicle Components Removed	kg	17.0
Amount of Stoddard Solvent in Fuel Tank	L	38.00

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

Spare tire and tools (14.5 kg), rear trim (2.5 kg)

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

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

TARGET VEHICLE STRUCTURAL MEASUREMENTS

No.	Description	Pre-Test
1	Total Length	4292
2	Total Width	1760
3	Bumper Top Height	550
4	Bumper Bottom Height	470
5	Longitudinal Member Top Height	567
6	Distance Between Longitudinal Members	845
7	Longitudinal Member Width	63
8	Engine Top Height	810
9	Engine Bottom Height	228
10	Engine and Gearbox Width	640
11	Front Bumper to Engine Distance	450
12	Front Shock Absorber Fixing Height	890
13	Bonnet Leading Edge Height	863
14	Front Shock Absorber Fixing Width	1125
15	Front Bumper to Front Axle Distance	875
16	Front Axle to A-Pillar Distance	465
17	A-Pillar to B-Pillar Distance	1070
18	B-Pillar to Rear Axle Distance	1125
19	B-Pillar to C-Pillar Distance	880
20	Roof Sill Bottom Height	1430
21	Roof Sill Top Height	1555
22	Floor Sill Bottom Height	225
23	Floor Sill Top Height	393

All measurements in millimeters.

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

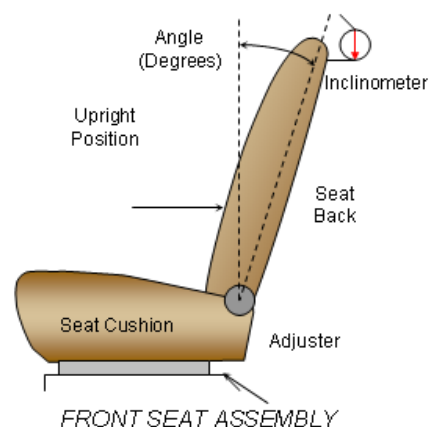
Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
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NOMINAL DESIGN RIDING POSITION

The procedure for the driver is as follows: the seat back is set to the manufacturer's designated angle. The procedure for the passenger is as follows: the seat back is set to position the transverse instrumentation platform of the dummy's head at $0^\circ \pm 0.5^\circ$. Seat back angle is measured at the headrest post.

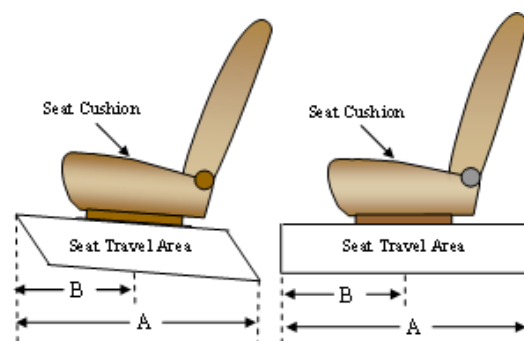
SEAT BACK ANGLE

Seating Position	Degrees
Driver Seat Back Angle	4.4
Passenger Seat Back Angle	0.4



SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rear most possible position. The driver's seat is set to the middle of the fore-aft travel. The passenger's seat is set to the forward most position where the ATD will not contact any interior panels.



SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position
Driver Seat	245 mm (25 detents)	88 mm (9th detent)
Passenger Seat	245 mm (25 detents)	122.5 mm (12th detent)

SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position for a 50th percentile adult male ATD for the driver, and a 5th percentile adult female ATD for the passenger. Position "L" is the lowermost position, followed by position "M1". Position "H" is the uppermost position.

SEAT BELT UPPER ANCHORAGES

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

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

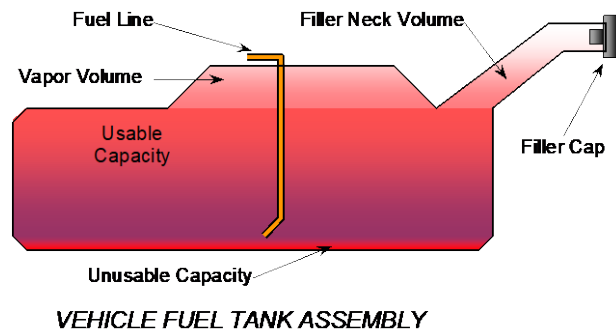
Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	40.90
Usable Capacity of "Optional Tank"	
92 - 94% of Usable Capacity	37.63 to 38.45
Actual Amount of Stoddard Solvent Used	38.00
1/3 of Usable Capacity	13.63

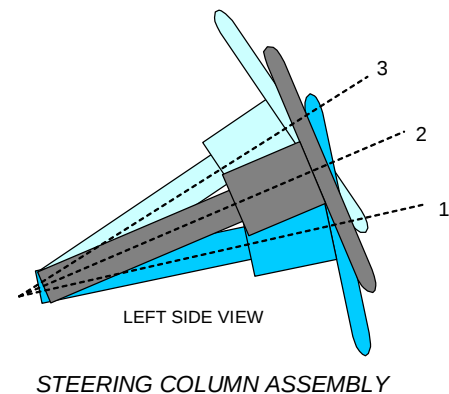
FUEL PUMP

The vehicle is equipped with an electronic fuel pump. The fuel pump normally operates when the vehicle's electrical system is activated. The fuel pump operates for 1.0 second after the ignition is switched to "ON", while the engine is running, and for 1.5 seconds after the engine stops.



STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements.



STEERING COLUMN POSITIONING

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	24.3	82
Geometric Center Position, No. 2	26.3	101
Uppermost Position, No. 3	28.3	119
Telescoping Steering Wheel Travel		37
Test Position	26.3	101

DATA SHEET NO. 3

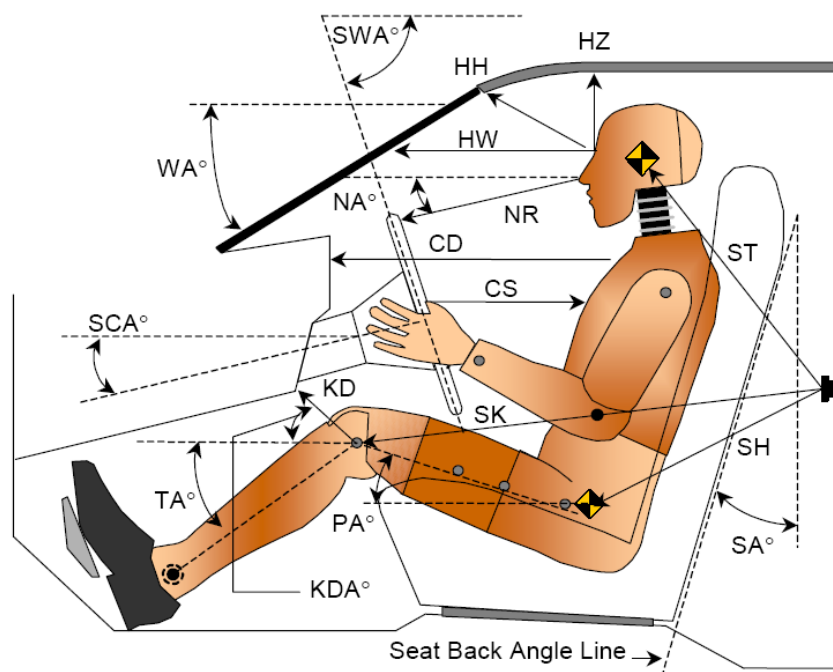
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV

NHTSA No.: O20205202

Test Program: 56.3 km/h Frontal Impact NCAP Test

Test Date: 09/29/20



LEFT SIDE VIEW

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		29.6		
SWA°	Steering Wheel Angle		65.2		
SCA°	Steering Column Angle		24.8		
SA°	Seat Back Angle (On Headrest Post)		4.4		0.4
HZ	Head to Roof	208	90.0	252	90.0
HH	Head to Header	350	24.8	326	45.6
HW	Head to Windshield	644	0.0	695	0.0
NR	Nose to Rim	407	15.6	474	26.8
CD	Chest to Dash	523	10.7	423	4.2
CS	Chest to Steering Hub	312	10.2		
RA	Rim to Abdomen	201	0.0		
KDL	Left Knee to Dash	159	27.9	60	25.5
KDR	Right Knee to Dash	107	30.8	103	25.3
PA°	Pelvic Angle		20.3		20.5
TA°	Tibia Angle		47.2		71.0
SK	Striker to Knee	560	1.1	636	1.3
ST	Striker to Head	567	83.0	501	72.2
SH	Striker to H-Point	196	29.9	317	14.4

DATA SHEET NO. 4

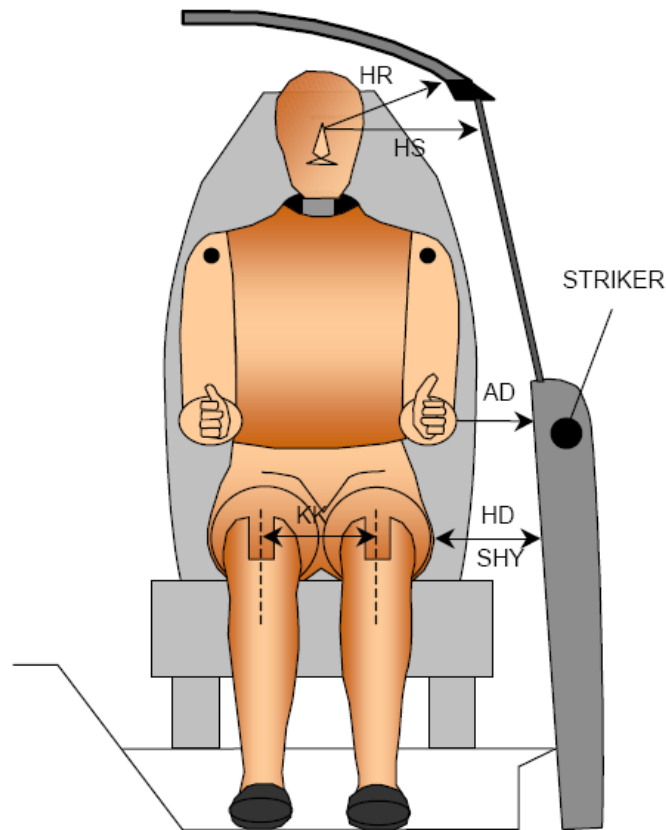
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV

NHTSA No.: O20205202

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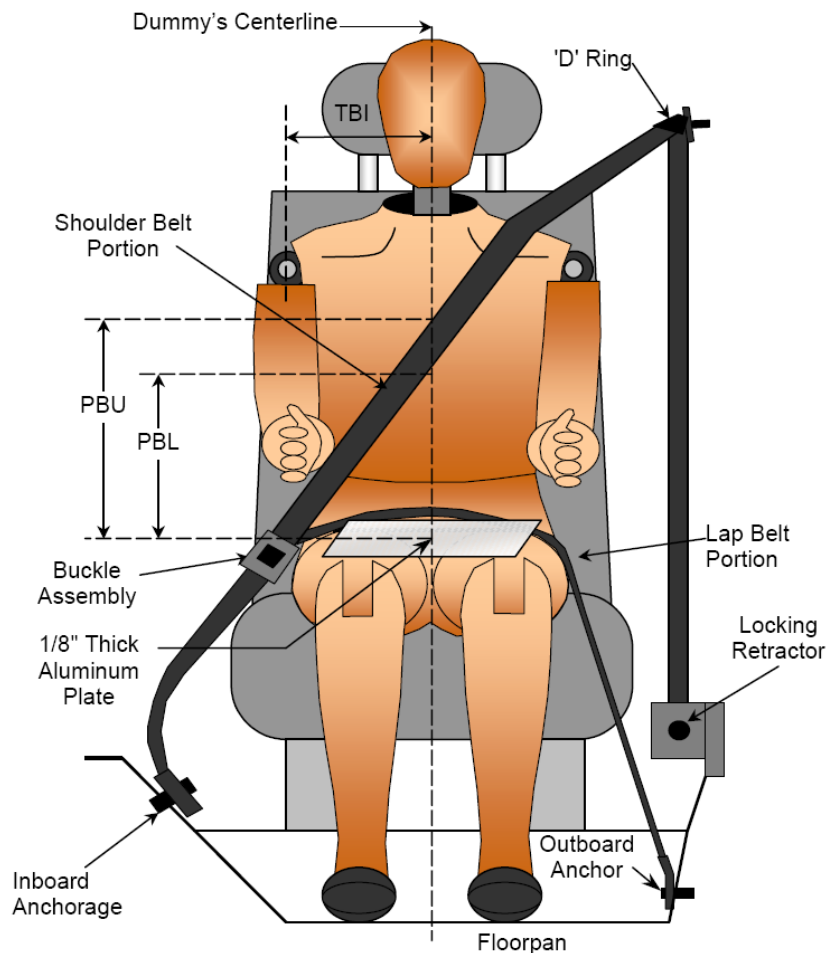


Code	Description	Driver (mm)	Passenger (mm)
AD	Arm to Door	92	82
HD	H-Point to Door	126	162
HR	Head to Side Header	205	279
HS	Head to Side Window	325	360
KK	Knee to Knee	290	160
SHY	Striker to H-Point (Y-Direction)	240	276
AA	Ankle to Ankle	280	205

DATA SHEET NO. 5

SEAT BELT POSITIONING DATA

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20



FRONT VIEW OF DUMMY

SEAT BELT POSITIONING MEASUREMENTS

Code	Measurement Description	Units	Driver	Passenger
PBU	Top Surface of Aluminum Plate to Belt Upper Edge	mm	330	300
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	250	225

BELT LENGTH DATA

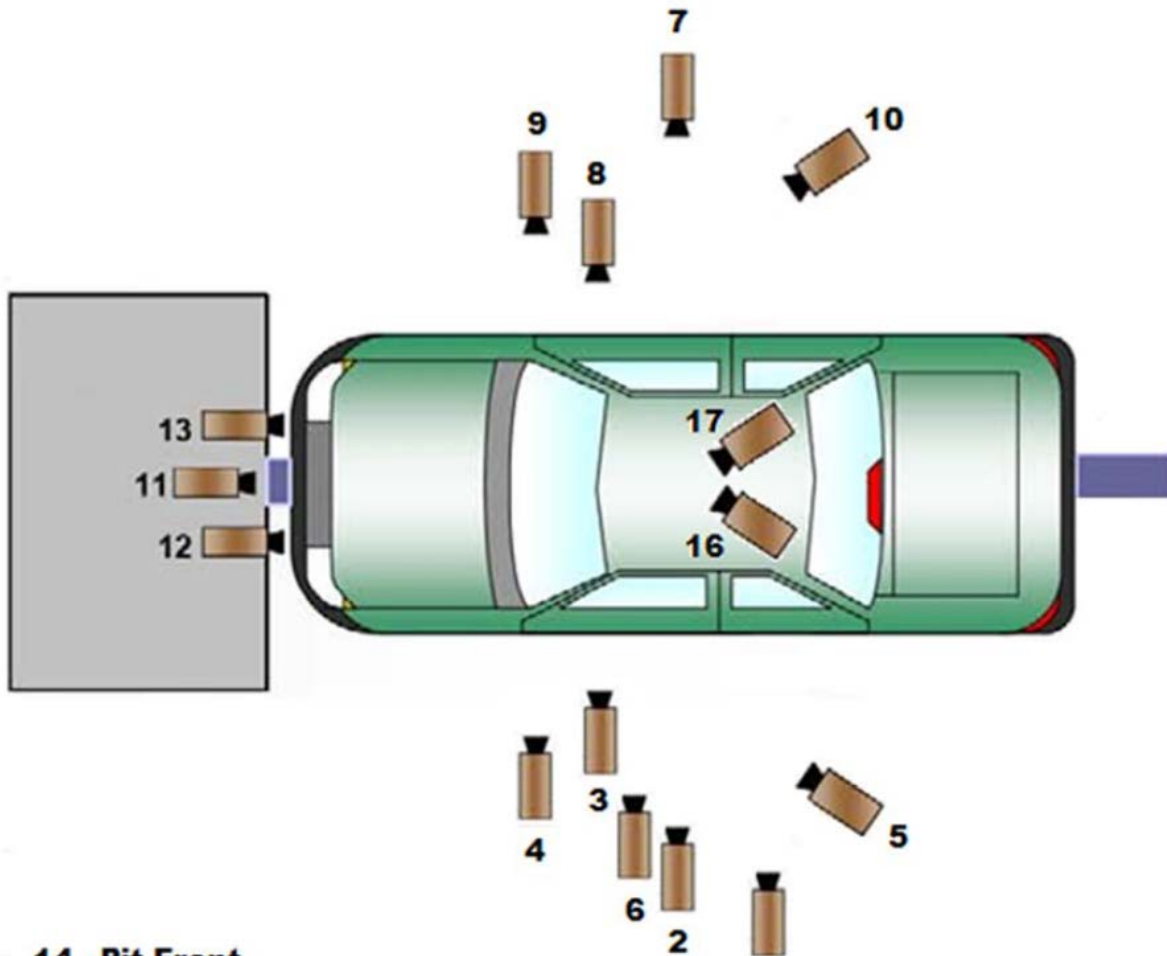
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	844	895
Lap Belt Length as Measured on ATD	mm	625	962
Remainder of Belt on Reel	mm	1050	158
Total Belt Length for Continuous Webbing Systems	mm	2519	2015

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

CAMERA POSITIONS FOR FRONTAL IMPACTS



14 - Pit Front

15 - Pit Rear

16 & 17 - Driver and Passenger Onboard

1- Real Time Camera

***Camera locations are approximate and not to scale*

DATA SHEET NO. 6 ... (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

CAMERA LOCATIONS

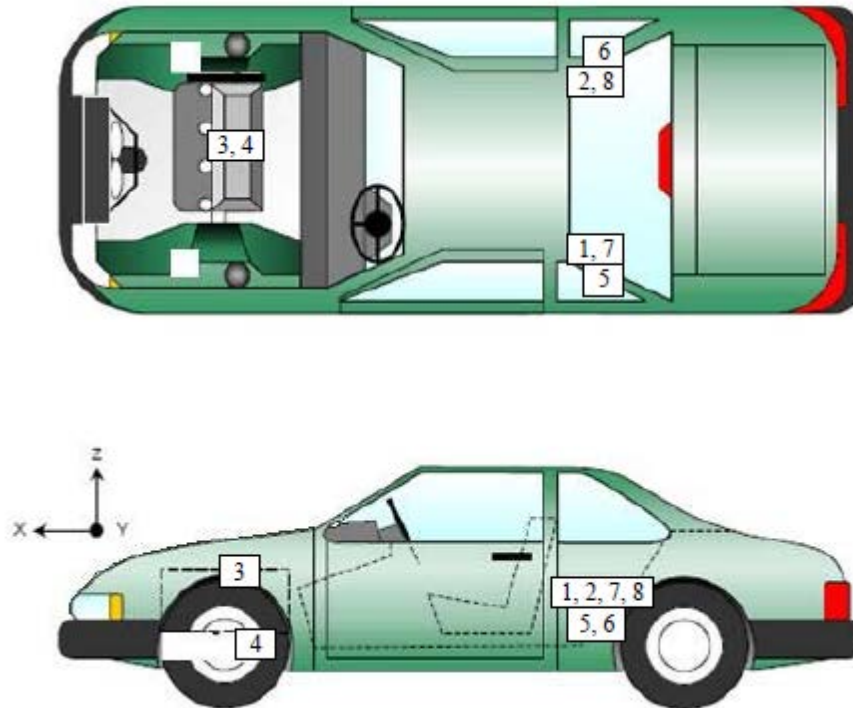
No.	Description	Location (mm)			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-11412	-8150	-1484		30
2	Left Overall	-2456	-7975	-1025	20	1000
3	Driver Close-Up	-2590	-7950	-1371	50	1000
4	Left Front Half	-1701	-6197	-1701	35	1000
5	Left Angle	-6696	-10308	-3211	105	1000
6	Steering Column	-1966	-10412	-3688	35	1000
7	Right Overall	-2336	7569	-1012	20	1000
8	Passenger Close-Up	-1733	7581	-1408	50	1000
9	Right Front Half	-1600	8214	-1811	35	1000
10	Right Angle	-6217	9516	-4830	85	1000
11	Windshield	-354	0	-5749	28	1000
12	Driver Windshield	297	-366	-2460	24	1000
13	Passenger Windshield	297	366	-2460	24	1000
14	Pit Front	-756	0	1495	20	1000
15	Pit Rear	-3398	0	1495	20	1000
16	Driver Onboard	-1420	-250	-1400	8	1000
17	Passenger Onboard	1420	250	-1400	8	1000

Coordinates: +X = forward impact plane
 +Y = right of monorail center
 +Z = into ground

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Description	Location		
		X	Y	Z
1	Left Rear Accelerometer X-Direction	1390	-690	-360
2	Right Rear Accelerometer X-Direction	1390	690	-360
3	Engine Top X	3340	306	-725
4	Engine Bottom X	3230	317	-190
5	Left Rear Accelerometer Z-Direction	1390	-690	-360
6	Right Rear Accelerometer Z-Direction	1390	690	-360
7	Left Rear Accelerometer X-Direction Redundant	1390	-690	-360
8	Right Rear Accelerometer X-Direction Redundant	1390	690	-360

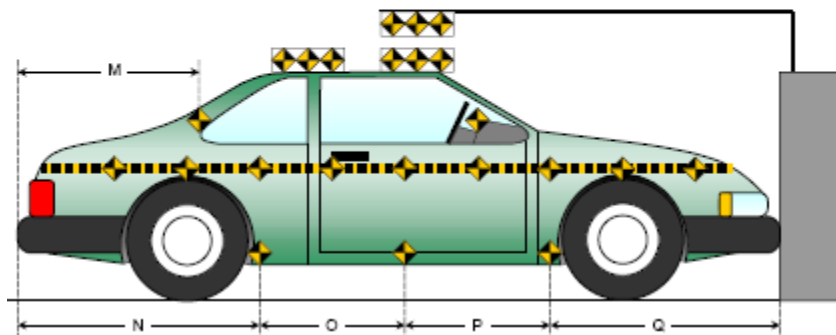
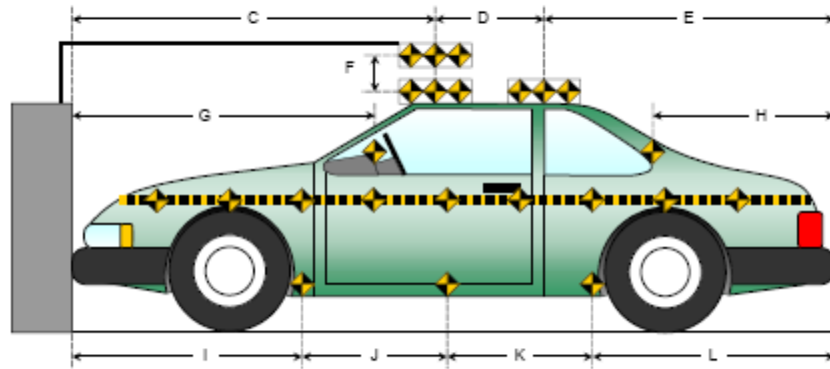
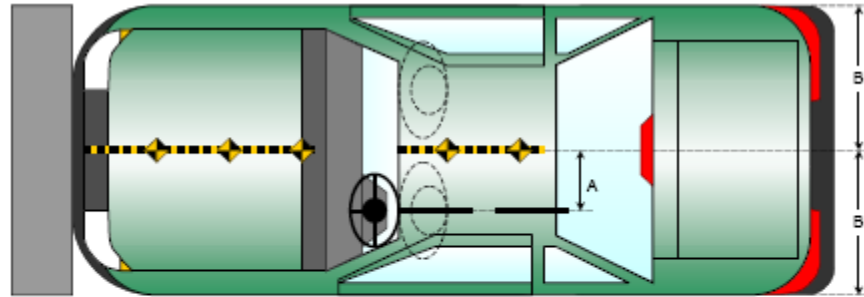
Reference Points: X – Rear Surface of Vehicle (+ forward)
 Y – Vehicle Centerline (+ to right)
 Z – Ground Plane (+ down)

DATA SHEET NO. 8

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

Item	Value
A	320
B	860
C	1980
D	605
E	1700
F	305
G	1625
H	705
I	1335
J	855
K	857
L	1250
M	695
N	1245
O	855
P	857
Q	1325



All measurements in millimeters.

DATA SHEET NO. 9

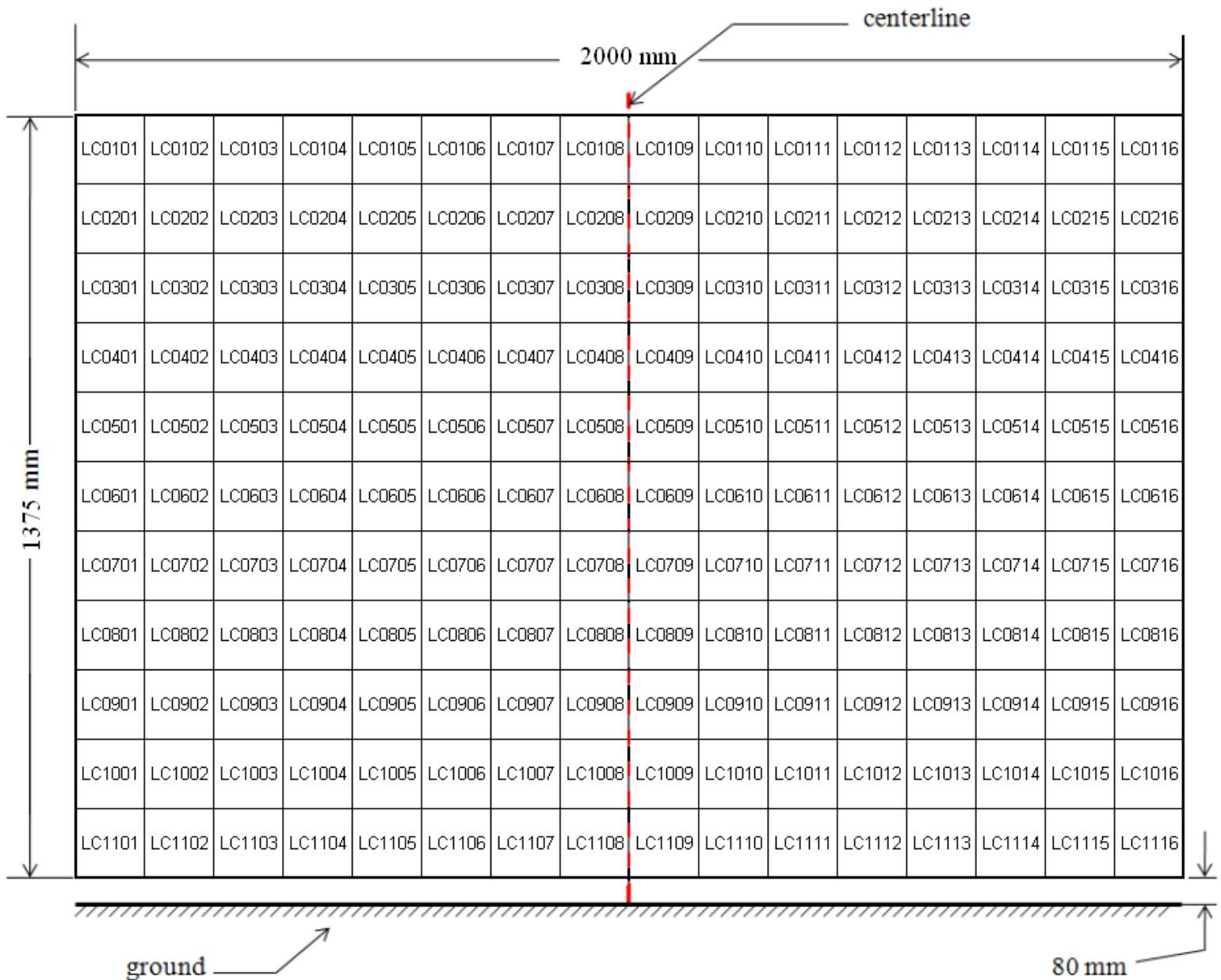
LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2020 Nissan Kicks 5-Door SUV

NHTSA No.: O20205202

Test Program: 56.3 km/h Frontal Impact NCAP Test

Test Date: 09/29/20



DATA SHEET NO. 10**TEST VEHICLE SUMMARY OF RESULTS**

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

INSTRUMENTATION

Driver Dummy Accelerometers	47
Passenger Dummy Accelerometers	47
Vehicle Structure Accelerometers	8
Load Cell Barrier	528
Total	630

CAMERA COVERAGE

High-Speed Vehicle On Board	2
High-Speed Off Board	14
Real Time	1
Total	17

DATA SHEET NO. 11
POST-TEST OBSERVATIONS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

TEST DUMMY INFORMATION AND CONTACT LOCATIONS

Description	Driver	Passenger
Dummy Type/Serial No.	P572E 50th Percentile Male ATD / 360	P572O 5th Percentile Female ATD / 141
Head Contact	Frontal Airbag, Headrest	Frontal Airbag, Headrest
Upper Torso Contact	Frontal Airbag	Frontal Airbag
Lower Torso Contact	Frontal Airbag	Frontal Airbag
Left Knee Contact	Steering Column, Knee Airbag	Knee Airbag
Right Knee Contact	Knee Airbag	Knee Airbag

DOOR OPENING, TRUNK OPENING, AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Locked / Unlocked Doors	Locked	Locked
Front Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Rear Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Trunk/Hatch/Tailgate Opening	None	
Seat Track Shift (mm)	0	0
Seat Back Movement from Initial Position	None	None

OTHER VEHICLE POST-TEST OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Broken
Window Damage	None
Other Notable Effects	None

VEHICLE REBOUND FROM BARRIER

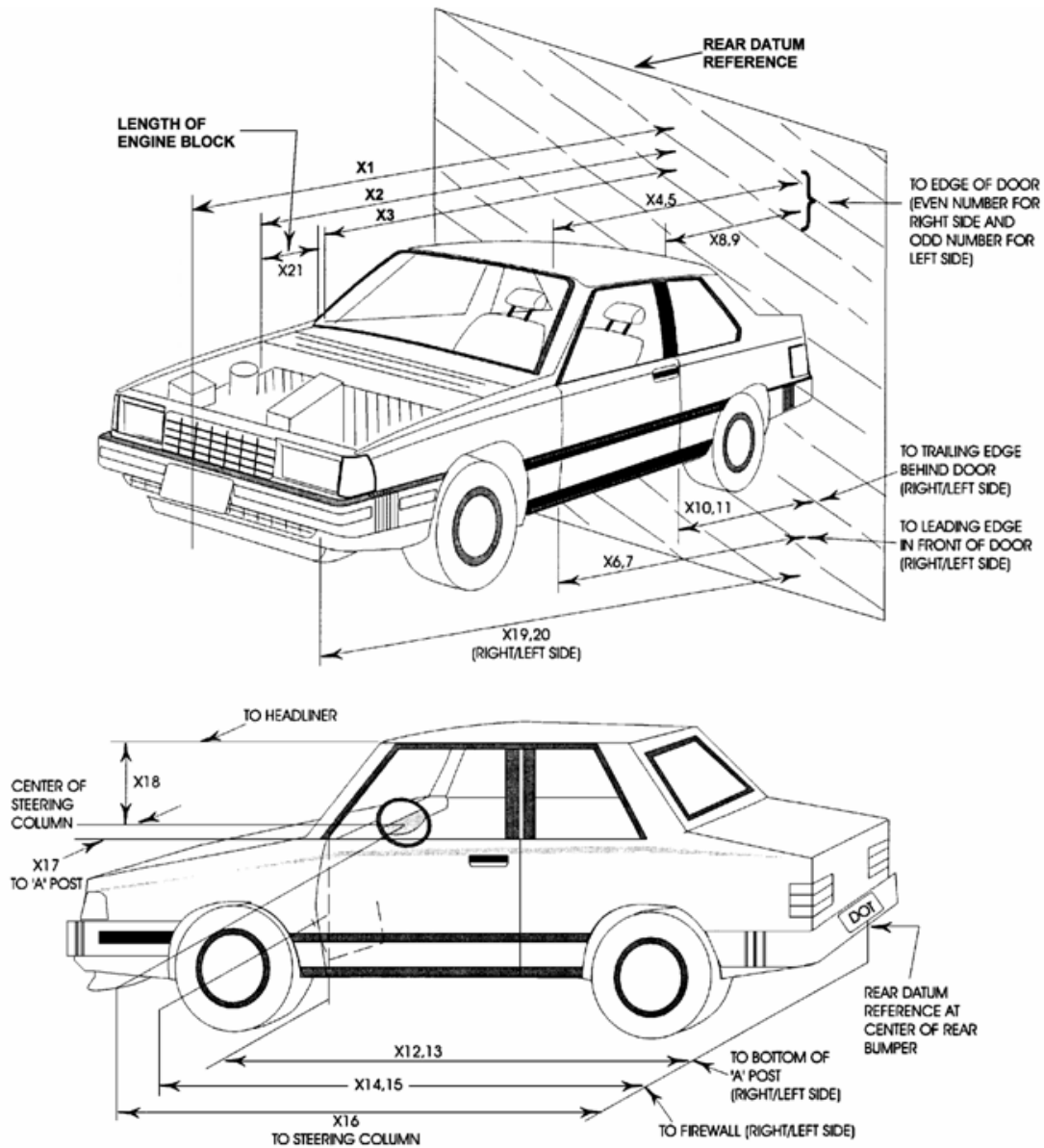
Measured Parameter	Units	Value
Left Side	mm	2384
Center	mm	2305
Right Side	mm	2365
Average	mm	2351

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Driver		Passenger	
	Installed	Operated	Installed	Operated
Front Airbag	Yes	Yes	Yes	Yes
Side Airbag 1 (Curtain)	Yes	No	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	No	Yes	No
Knee Airbag	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes

DATA SHEET NO. 12
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20



DATA SHEET NO. 12 ... (CONTINUED)**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4292	3816	-476
2	Rear Surface of Vehicle to Front of Engine	3642	3590	-52
3	RSOV to Firewall	3447	3447	0
4	RSOV to Upper Leading Edge of Right Door	3000	3007	7
5	RSOV to Upper Leading Edge of Left Door	3000	2990	-10
6	RSOV to Lower Leading Edge of Right Door	2975	2970	-5
7	RSOV to Lower Leading Edge of Left Door	2975	2976	1
8	RSOV to Upper Trailing Edge of Right Door	1922	1920	-2
9	RSOV to Upper Trailing Edge of Left Door	1922	1920	-2
10	RSOV to Lower Trailing Edge of Right Door	1930	1933	3
11	RSOV to Lower Trailing Edge of Left Door	1930	1931	1
12	RSOV to Bottom of A-Pillar, Right Side	2980	2980	0
13	RSOV to Bottom of A-Pillar, Left Side	2985	2985	0
14	RSOV to Firewall, Right Side	3419	3420	1
15	RSOV to Firewall, Left Side	3417	3416	-1
16	RSOV to Steering Column	2700	2620	-80
17	Center of Steering Column to A-Pillar	440	438	-2
18	Center of Steering Column to Headliner	550	547	-3
19	RSOV to Right Side of Front Bumper	3662	3611	-51
20	RSOV to Left Side of Front Bumper	3662	3638	-24
21	Length of Engine Block	575	575	0
RD	RSOV to Right Side of Dash Panel	2832	2828	-4
CD	RSOV to Center of Dash Panel	2710	2711	1
LD	RSOV to Left Side of Dash Panel	2813	2809	-4

All measurements in millimeters.

DATA SHEET NO. 13**ACCIDENT INVESTIGATION DIVISION DATA**

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

VEHICLE INFORMATION

VIN: 3N1CP5BV3LL531122 Wheelbase (mm): 2635
Vehicle Size Category: Passenger Car Test Weight (kg): 1404.0

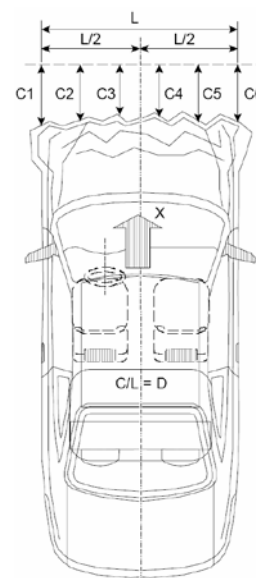
ACCELEROMETER DATA

Accelerometer Locations: Left Rear Crossmember
Cal. Procedure/Interval: Vibration Test / 6 months
Integration Algorithm: NHTSA Standard
Impact Velocity (km/h): 56.33
Velocity Change (km/h): 61.6
Time of Separation (msec): 68.8

Linearity: Good

CRUSH PROFILE

Collision Deformation Classification: 12FDEW2
Midpoint of Damage: Vehicle Centerline
Damage Region Length (mm): 1496
Impact Mode: Full Frontal



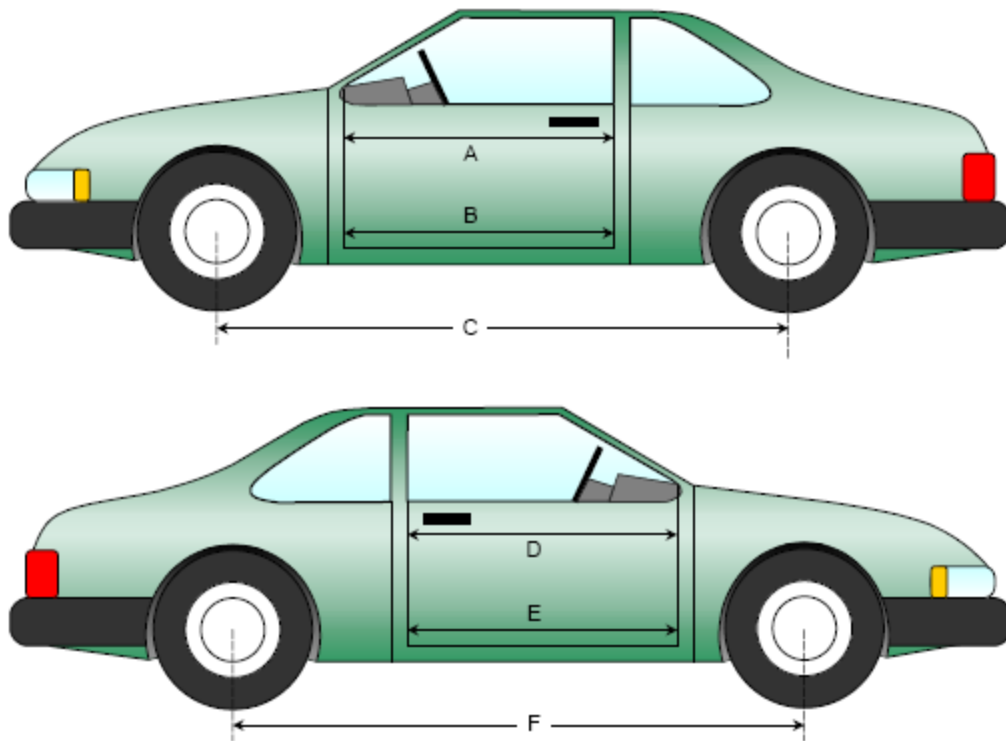
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	300	476	176
C2	Crush Zone 2 at Left Side	mm	120	467	347
C3	Crush Zone 3 at Left Side	mm	62	469	407
C4	Crush Zone 4 at Right Side	mm	62	484	422
C5	Crush Zone 5 at Right Side	mm	120	493	373
C6	Crush Zone 6 at Right Side	mm	300	500	200
L	C1 to C6	mm	1496		

DATA SHEET NO. 14**VEHICLE INTRUSION MEASUREMENTS**Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20**DOOR OPENING WIDTH**

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	974	974	0
B	Left Side Lower	mm	853	852	1
D	Right Side Upper	mm	973	973	0
E	Right Side Lower	mm	867	867	0

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2635	2580	55
F	Right Side Wheelbase	mm	2635	2600	35



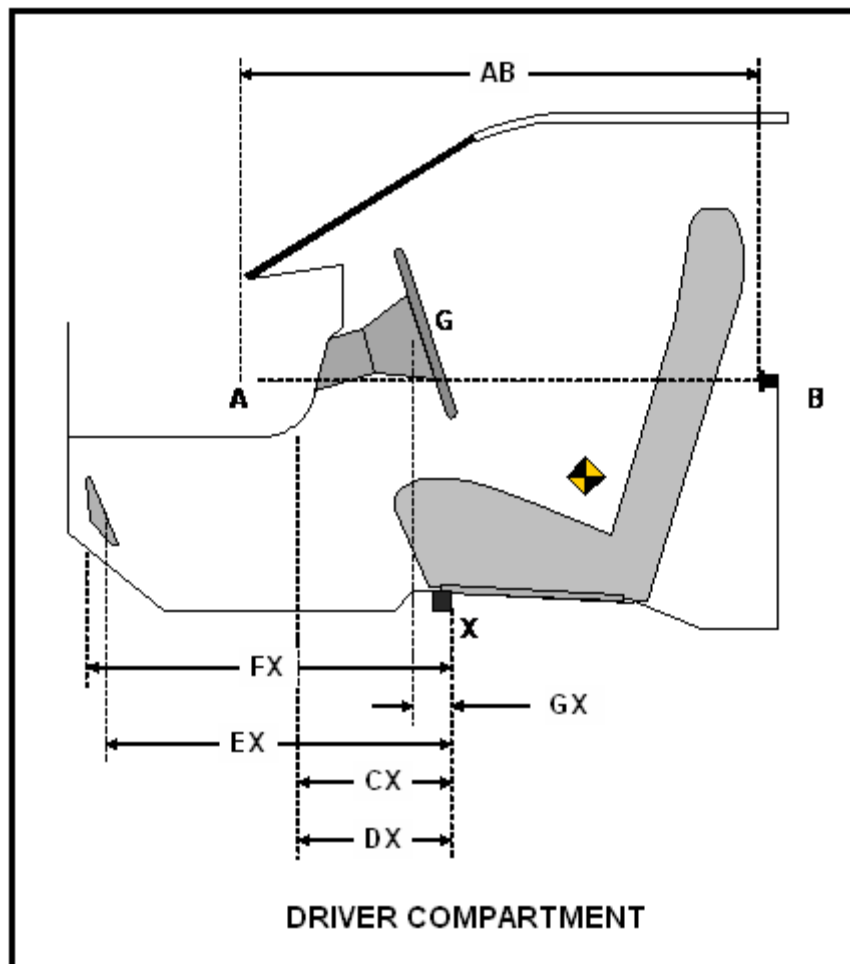
VEHICLE INTRUSION MEASUREMENTS

Test Date: 09/29/20

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	900	897	3
CX	Left Knee Bolster to X	mm	305	280	25
DX	Right Knee Bolster to X	mm	305	300	5
EX	Brake Pedal to X	mm	500	460	40
FX	Foot Rest to X	mm	620	530	90
GX	Center of Steering Wheel Hub to X	mm	77	110	-33

X = Front of Seat Track (Stationary)



DATA SHEET NO. 15

SUMMARY OF INDICANT FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

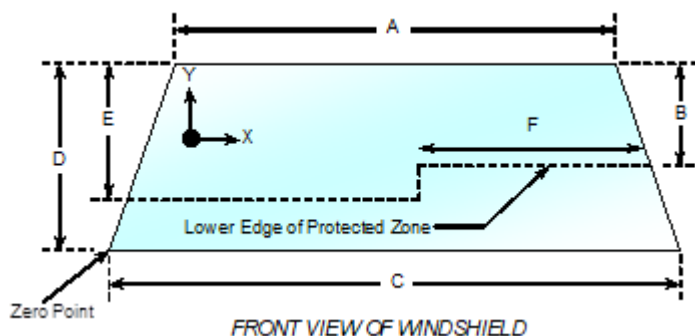
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with rubber molding and rubber cement.

The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicles not equipped with occupant passive restraints and 50% for each side of the windshield for vehicles which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 28.9° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2193	2193	100.0%
Right Side	2193	2193	100.0%
Total	4386	4386	100.0%



Item	Units	Value
A	mm	1160
B	mm	420
C	mm	1380
D	mm	923
E	mm	507
F	mm	555

AREAS OF PROTECTED ZONE

FAILURES

- A.** Provide Coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one that is normally in contact with the windshield.
- B.** Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y

X	Y

DATA SHEET NO. 16

FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS

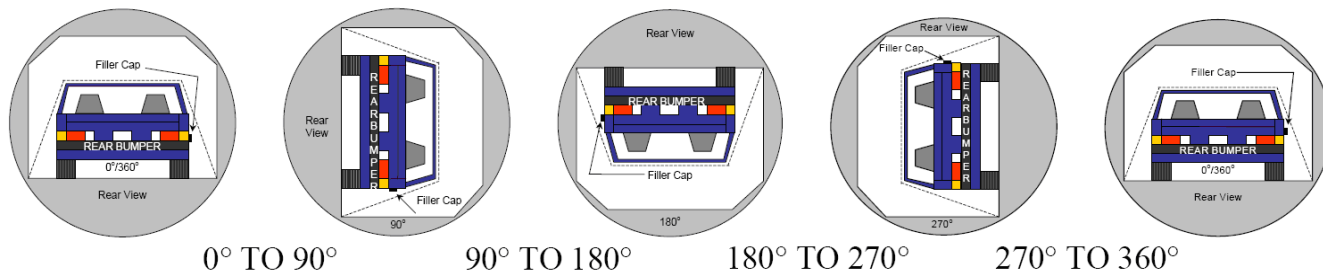
Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 28.9° C Test Time: 1:52 PM

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
 (Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
 (Maximum allowable = 1 oz./minute)
- D. Spillage: There was no Stoddard solvent spillage.



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard solvent spillage: There was no Stoddard solvent spillage.

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	81	300	381
90° To 180°	81	300	381
180° To 270°	78	300	378
270° To 360°	80	300	380

DATA SHEET NO. 16 ... (CONTINUED)**FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS**Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20**FMVSS 301 SPILLAGE TABLE**

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

SOLVENT SPILLAGE LOCATION TABLE

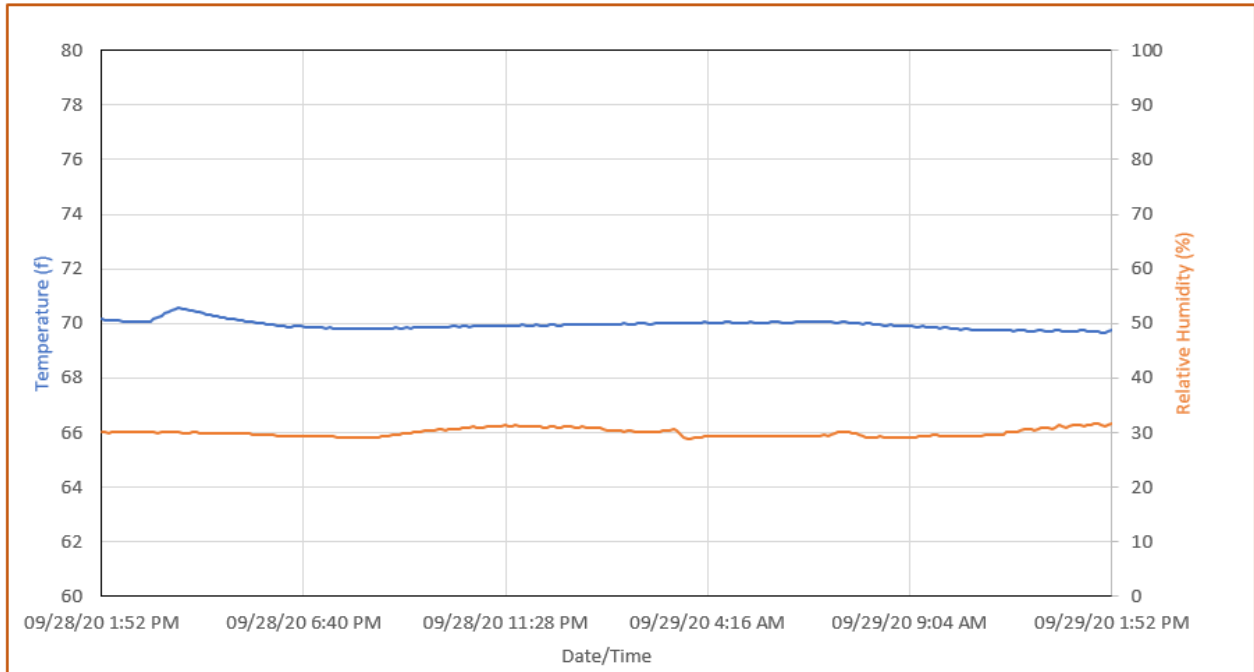
Test Phase	Spillage Location
0° To 90°	
90° To 180°	
180° To 270°	
270° To 360°	

DATA SHEET NO. 17

DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2020 Nissan Kicks 5-Door SUV NHTSA No.: O20205202

Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 09/29/20



APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

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FIGURE 1. Load Cell Location

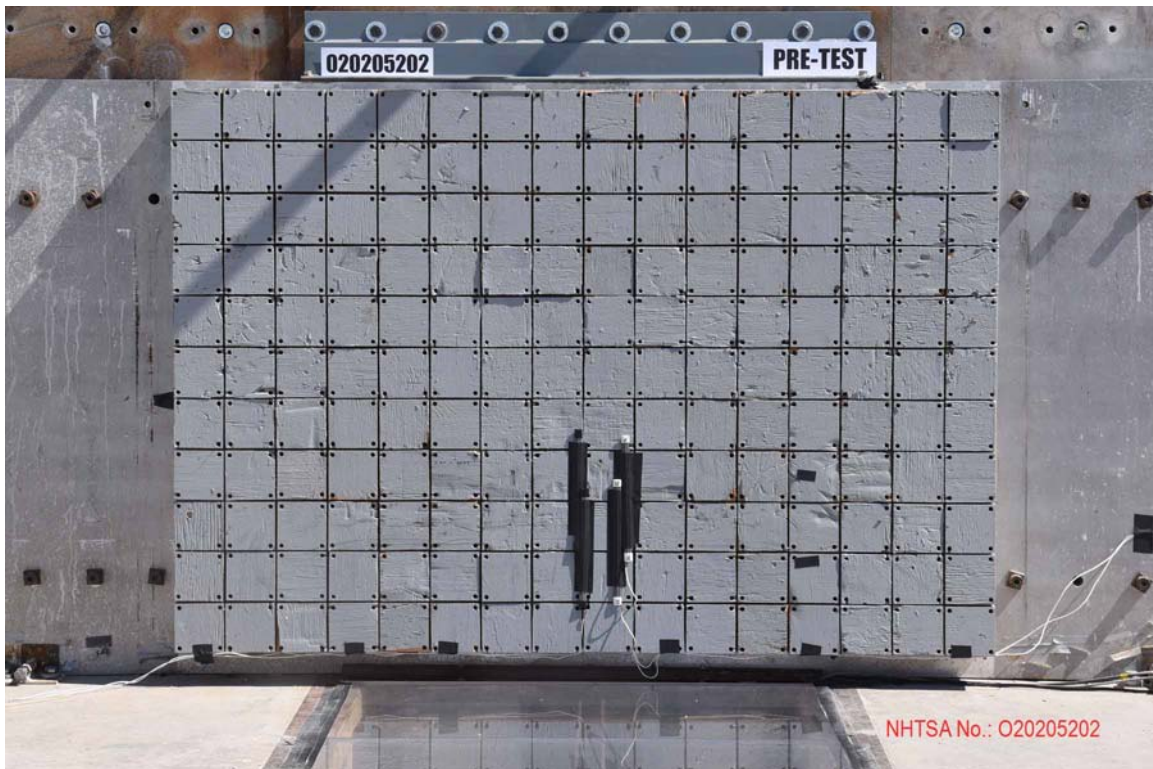


FIGURE 2. Pre-Test Load Cell Wall

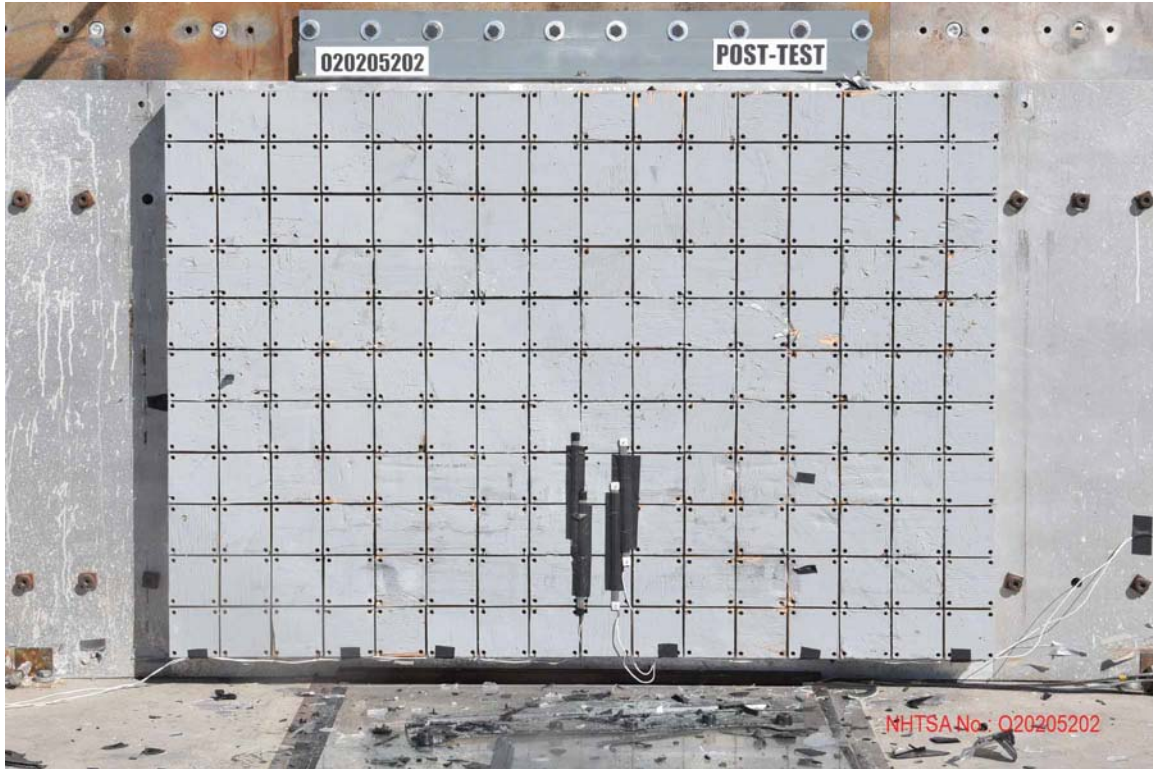


FIGURE 3. Post-Test Load Cell Wall



FIGURE 4. Manufacturer's Label



FIGURE 5. Tire Placard



FIGURE 6. 2020 Nissan Kicks Frontal as Delivered



FIGURE 7. Left Rear $\frac{3}{4}$ View, as Received



FIGURE 8. Pre-Test Front View of Test Vehicle



FIGURE 9. Post-Test Front View of Test Vehicle



FIGURE 10. Pre-Test Left View of Test Vehicle



FIGURE 11. Post-Test Left View of Test Vehicle



FIGURE 12. Pre-Test Right View of Test Vehicle



FIGURE 13. Post-Test Right View of Test Vehicle



FIGURE 14. Pre-Test Right Front ¾ View



FIGURE 15. Post-Test Right Front $\frac{3}{4}$ View



FIGURE 16. Pre-Test Left Rear $\frac{3}{4}$ View



FIGURE 17. Post-Test Left Rear $\frac{3}{4}$ View

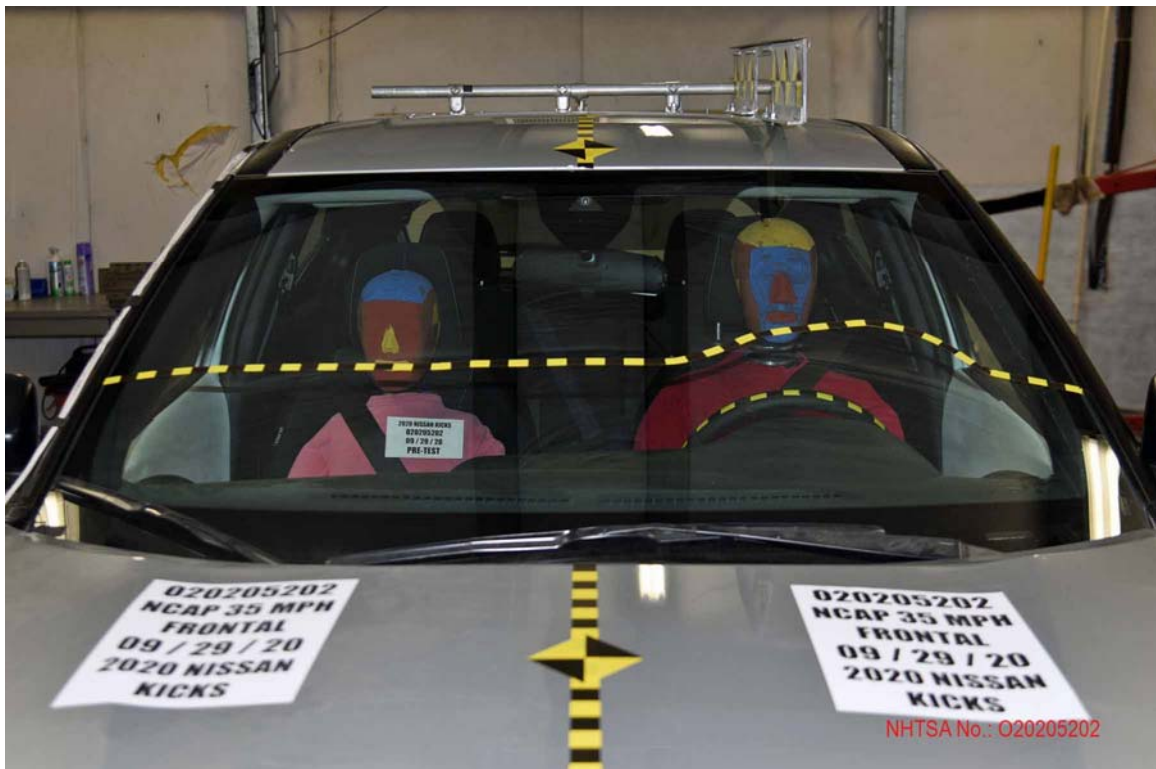


FIGURE 18. Pre-Test Windshield View



FIGURE 19. Post-Test Windshield View



FIGURE 20. Pre-Test Engine Compartment View



FIGURE 21. Post-Test Engine Compartment View



FIGURE 22. Pre-Test Fuel Filler Cap View



FIGURE 23. Post-Test Fuel Filler Cap View

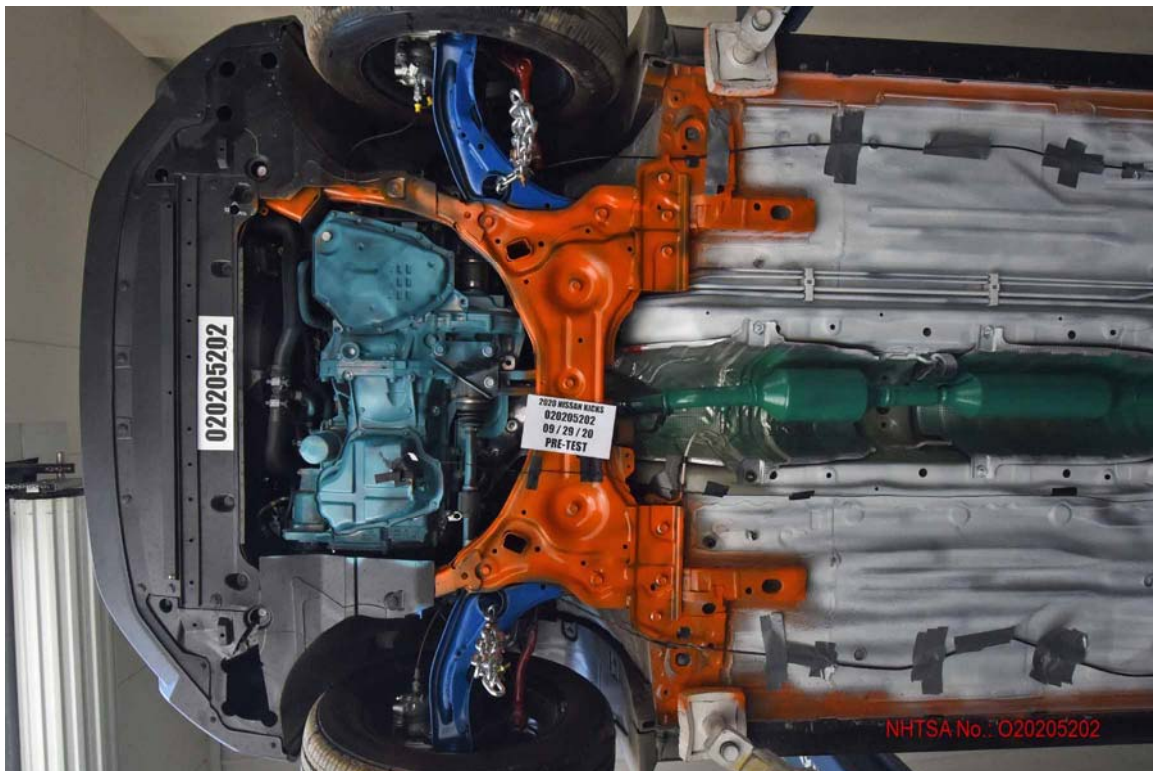


FIGURE 24. Pre-Test Front Underbody View



FIGURE 25. Post-Test Front Underbody View



FIGURE 26. Pre-Test Rear Underbody View



FIGURE 27. Post-Test Rear Underbody View



FIGURE 28. Pre-Test Dummy Cable Routing



FIGURE 29. Post-Test Dummy Cable Routing



FIGURE 30. Pre-Test Driver Dummy Front View



FIGURE 31. Post-Test Driver Dummy Front View



FIGURE 32. Pre-Test Driver Dummy Window View



FIGURE 33. Post-Test Driver Dummy Window View



FIGURE 34. Pre-Test Driver Dummy and Vehicle Interior View



FIGURE 35. Post-Test Driver Dummy and Vehicle Interior View



FIGURE 36. Pre-Test Driver's Seat Fore-Aft Markings



FIGURE 37. Post-Test Driver's Seat Fore-Aft Markings



FIGURE 38. Pre-Test View of Belt Anchorage for Driver Dummy



FIGURE 39. Post-Test View of Belt Anchorage for Driver Dummy



FIGURE 40. Pre-Test View of Belt Buckle and Latch Plate for Driver Dummy



FIGURE 41. Post-Test View of Belt Buckle and Latch Plate for Driver Dummy



FIGURE 42. Pre-Test Driver Dummy Feet



FIGURE 43. Post-Test Driver Dummy Feet



FIGURE 44. Pre-Test Driver's Side Knee Bolster



FIGURE 45. Post-Test Driver's Side Knee Bolster



FIGURE 46. Pre-Test Driver's Side Floorpan



FIGURE 47. Post-Test Driver's Side Floorpan



FIGURE 48. Post-Test Driver Dummy Face



FIGURE 49. Post-Test Driver Dummy Contact with Airbag



FIGURE 50. Post-Test Driver Dummy Contact with Headrest



FIGURE 50a. Post-Test Driver Dummy Contact with Knee Airbag



FIGURE 51. Pre-Test View of the Steering Wheel



FIGURE 52. Post-Test View of the Steering Wheel



FIGURE 53. Pre-Test Passenger Dummy Front View



FIGURE 54. Post-Test Passenger Dummy Front View



FIGURE 55. Pre-Test Passenger Dummy Window View



FIGURE 56. Post-Test Passenger Dummy Window View



FIGURE 57. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 58. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 59. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 60. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 61. Pre-Test View of Belt Anchorage for Passenger Dummy



FIGURE 62. Post-Test View of Belt Anchorage for Passenger Dummy



FIGURE 63. Pre-Test View of Belt Buckle and Latch Plate for Passenger Dummy



FIGURE 64. Post-Test View of Belt Buckle and Latch Plate for Passenger Dummy



FIGURE 65. Pre-Test Passenger Dummy Feet



FIGURE 66. Post-Test Passenger Dummy Feet



FIGURE 67. Pre-Test Passenger's Side Knee Bolster



FIGURE 68. Post-Test Passenger's Side Knee Bolster



FIGURE 69. Pre-Test Passenger's Side Floorpan



FIGURE 70. Post-Test Passenger's Side Floorpan

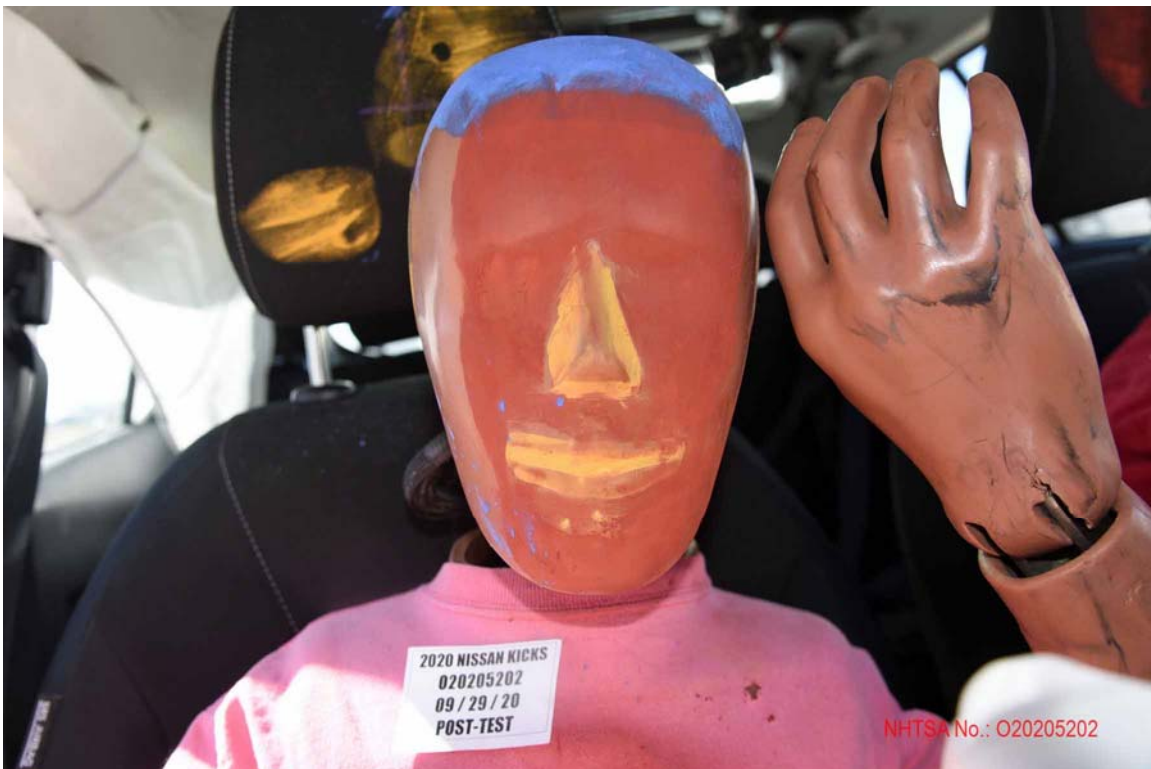


FIGURE 71. Post-Test Passenger Dummy Face



FIGURE 72. Post-Test Passenger Dummy Contact with Airbag



FIGURE 73. Post-Test Passenger Dummy Contact with Headrest



FIGURE 73a. Post-Test Passenger Dummy Contact with Front Airbag



FIGURE 73b. Post-Test Passenger Dummy Contact with Knee Airbag



FIGURE 73c. Post-Test Passenger Dummy Contact with Knee Bolster

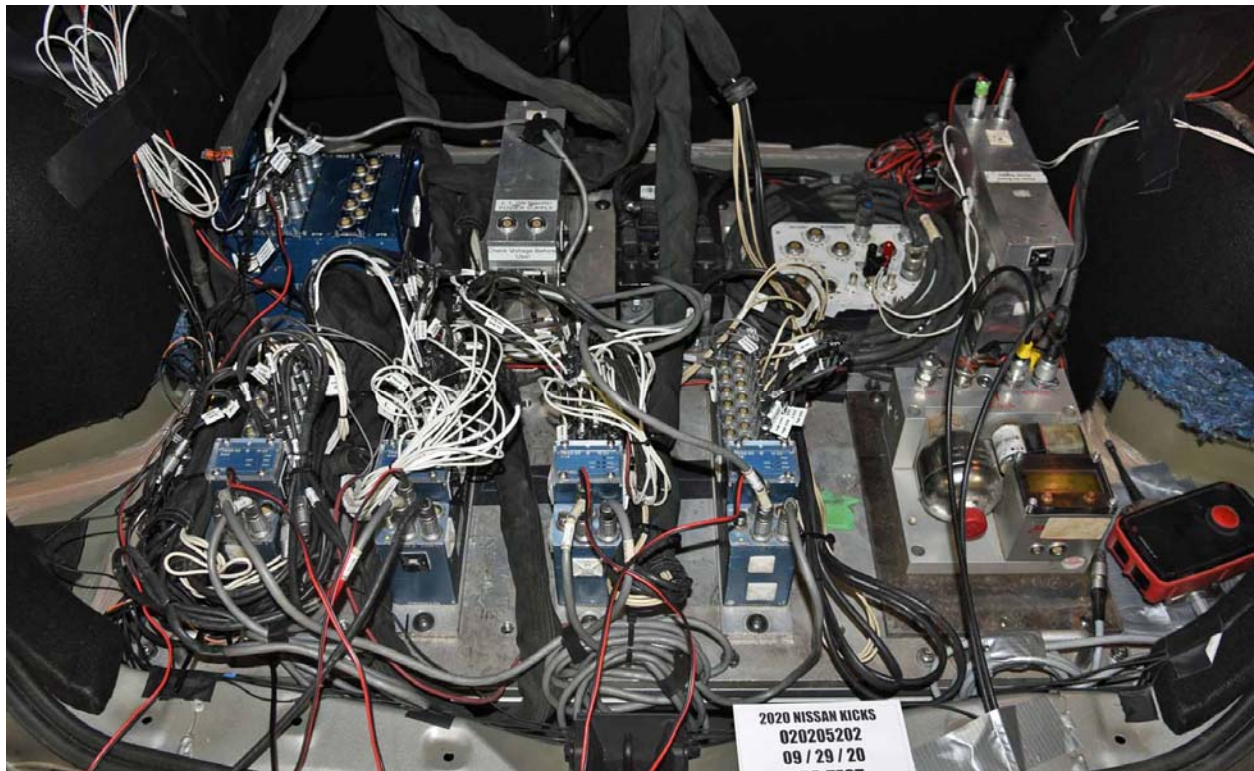


FIGURE 74. Photograph of Ballast Installed in Vehicle

Photograph Not Applicable

No Stoddard Solvent Spillage

FIGURE 75. Post-Test Stoddard Solvent Spillage Location View



FIGURE 76. Post-Test Speed Trap Read-Out

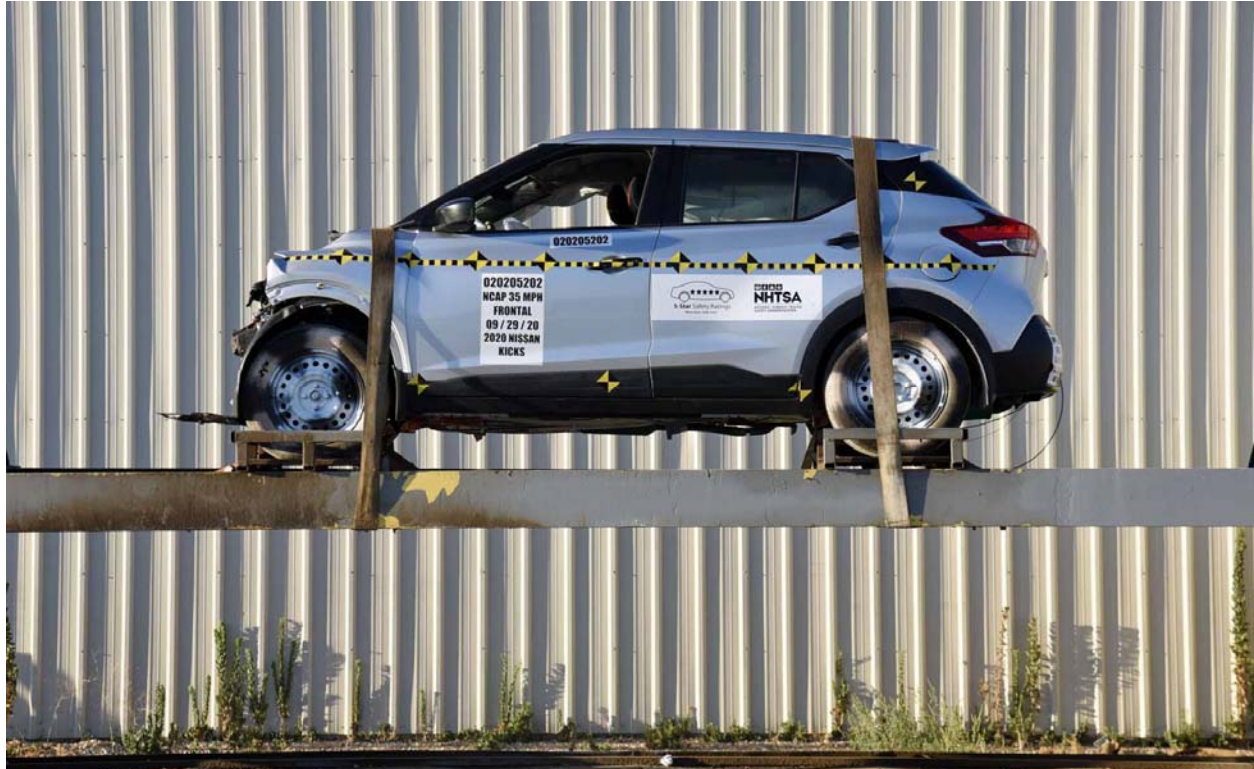


FIGURE 77. Vehicle at 0° on Static Rollover Device

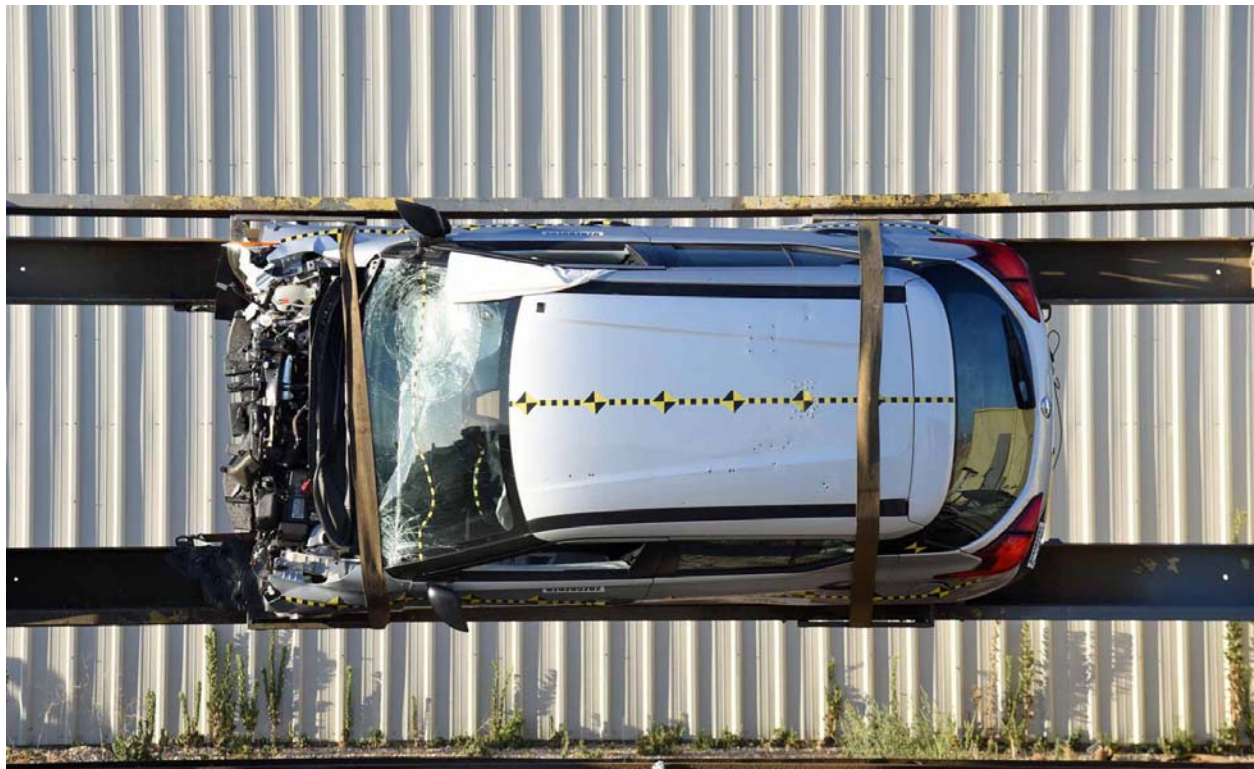


FIGURE 78. Vehicle at 90° on Static Rollover Device

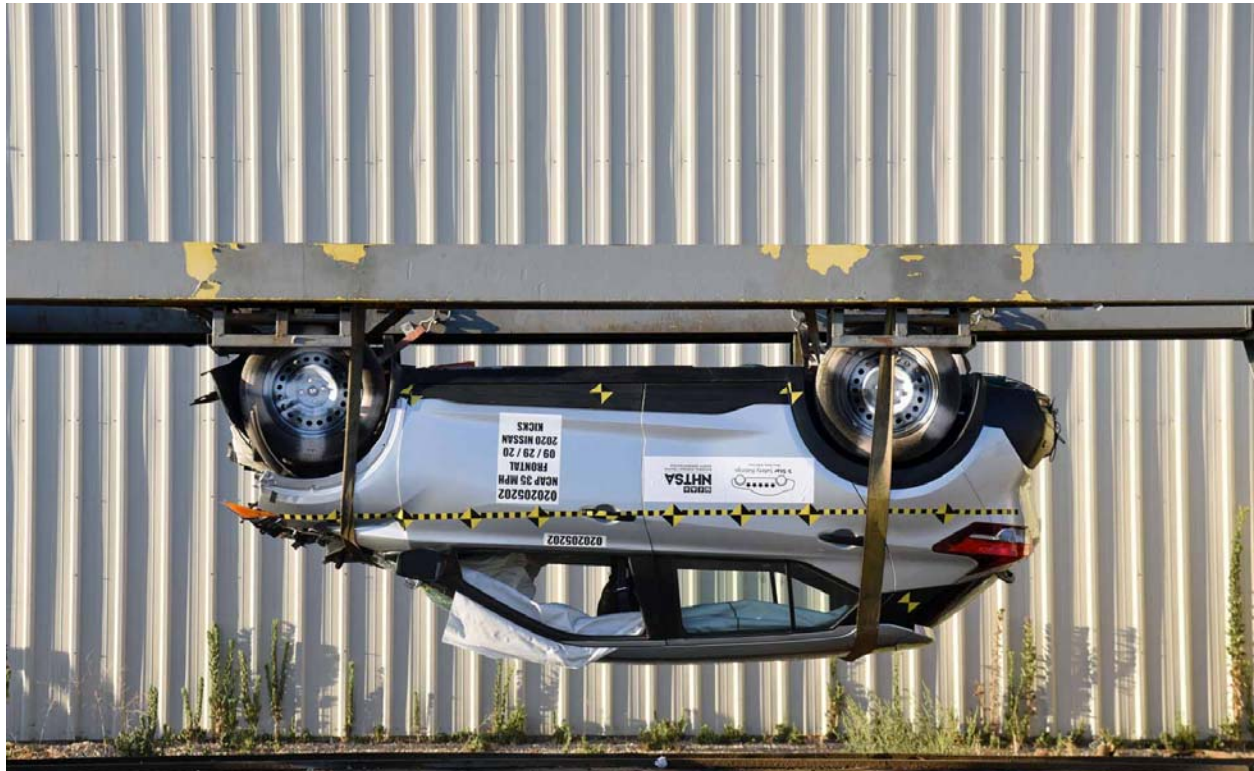


FIGURE 79. Vehicle at 180° on Static Rollover Device

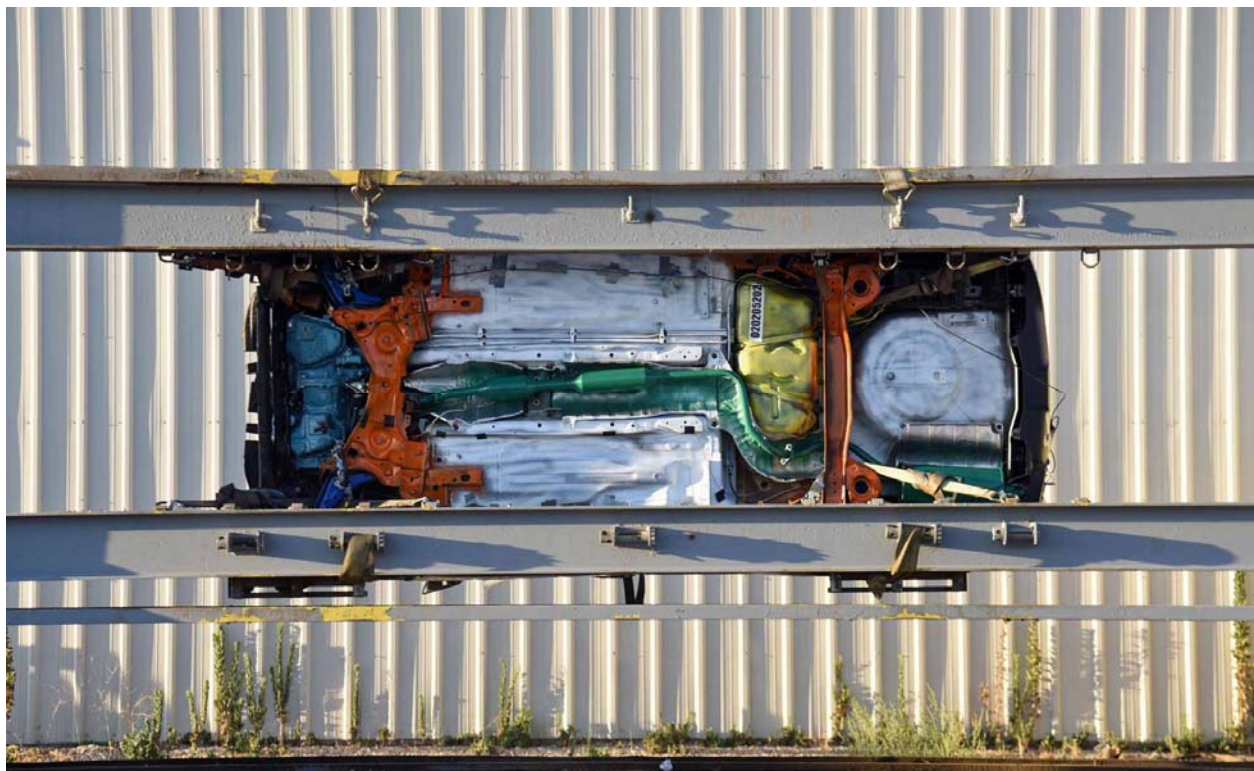


FIGURE 80. Vehicle at 270° on Static Rollover Device

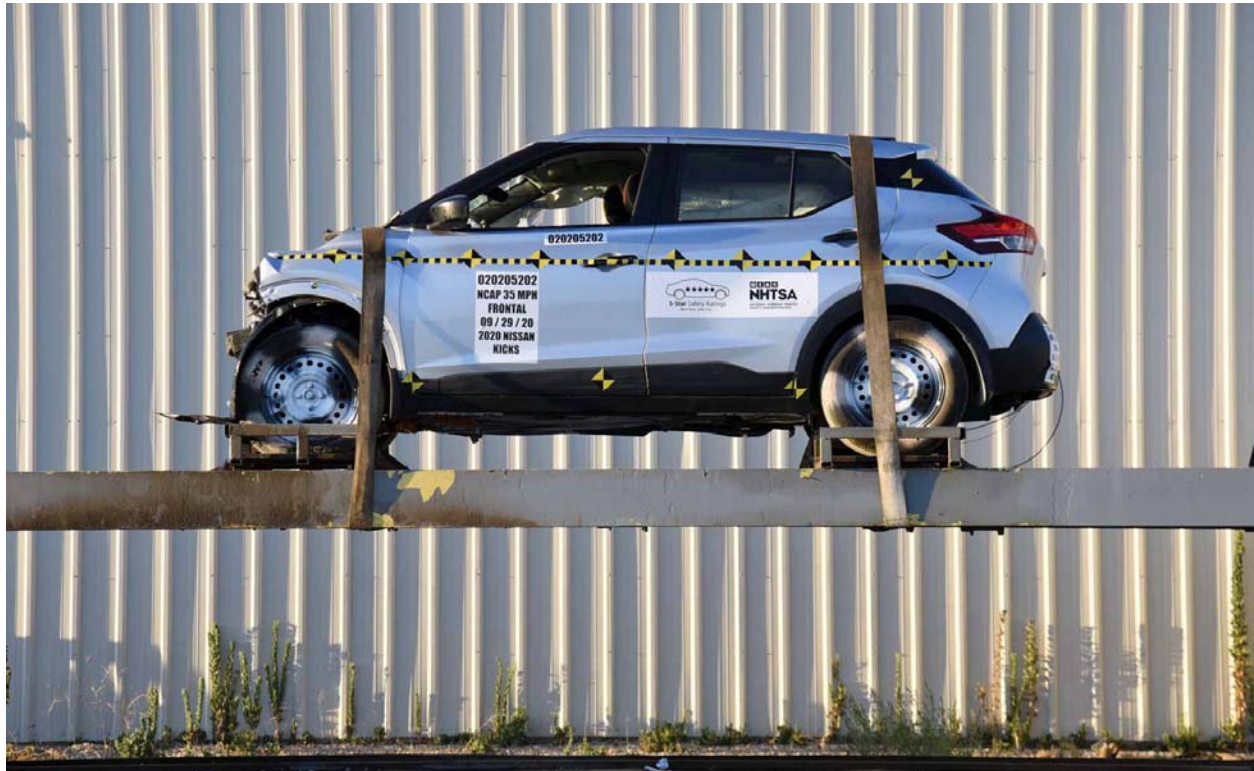


FIGURE 81. Vehicle at 360° on Static Rollover Device



FIGURE 82. 2020 Nissan Kicks Frontal Impact Event



2020 NISSAN KICKS S CVT



Scan QR code for general model information & options

Standard Equipment Included at No Extra Charge

MECHANICAL & PERFORMANCE
1.6 L DCHC 16-Valve 4-Cylinder Engine
Xtronic CVT (Continuously Variable Transmission)
Power-Assisted Vented Front Disc / Rear Drum Brakes
16" 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
Rear Outboard Side Impact Supplemental Air Bags
Side Impact Curtain Air Bags
Driver and Passenger Knee Air Bag
Driver and Passenger Seat Belt Warning and Reminders
Anti-Lock Braking System (ABS) w/ Brake Assist
Traction Control System (TCS)
Vehicle Dynamic Control (VDC)
Electronic Brake Force Distribution (EBD)
Fire Pressure Monitoring System (TPMS)
Nissan Vehicle Immobilizer System
Automatic Emergency Braking
w/ Pedestrian Detection (AEB w/ Ped.)
Forward Collision Warning (FCW)
Rear Automatic Braking (RAB)
Rear Sonar
Blind Spot Warning (BSW)
Rear Cross Traffic Alert (RCTA)
Lane Departure Warning (LDW)
Adaptive Steering Wheel
High Beam Assist (HBA)

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®
Sirius Eyes Free+
Audio and Bluetooth® Steering Wheel Controls
3 USB Ports (2 charge only)
RearView Monitor (RVM)
Tilt/Telescoping Steering Wheel
Power Windows
1 Touch Up/Down (Driver & Front Passenger)
4-Way Adjustable Cloth Front Bucket Seats
Easy Fill Tire Alert
Intelligent Auto Headlights (i-AH)
Power Door Locks
w/ Speed Sensing and Auto-Lock
Driver Seat Armrest and Seat Lifter
60/40 Split Rear Seats

EXTERIOR
Manual Folding Power Outside Mirrors
Front and Rear Bumper with Black Fascia Accent
Variable Intermittent Wipers w/ Mist
Rear Wiper

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

**Optional equipment replaces standard equipment where applicable

MSRP does not include dealer installed options and accessories, local taxes or license fees. This label has been applied pursuant to federal law. Do not remove prior to delivery to the ultimate purchaser.

Manufacturer's Suggested Retail Base Price:	\$18,870.00
Options Included by Manufacturer	
SPLASH GUARDS	205.00
CARPETED FLOOR MATS W/CARGO MAT	225.00
DESTINATION CHARGES	1,095.00
Total*	\$20,395.00

EPA DOT Fuel Economy and Environment

Fuel Economy

33 MPG

combined city/hwy city highway

3.0 gallons per 100 miles

MIDSIZE CARS range from 12 to 136 MPG. The best vehicle rates 136 MPG.

You save \$1,250

in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$1,250

Fuel Economy & Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only)

1 7 10 1 7 10

Best

This vehicle emits 288 grams CO₂ per mile. The best emits 8 grams per mile (tailpipe only). Producing and distributing fuel also create emissions. Learn more at fuel-economy.gov

Annual results 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 \$7,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$2.30 per gallon. MPG is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score Not Rated

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

Frontal Crash	Driver Passenger	Not Rated
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat Rear seat	Not Rated
Based on the risk of injury in a side impact.		
Rollover		Not Rated
Based on the risk of rollover in a single-vehicle crash.		

Star ratings range from 1 to 5 stars (*****), with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236

This Vehicle qualifies for Nissan's **Security+Plus Extended Protection Plan**

The only service agreement backed by Nissan Extended Services North America! Ask your dealer for details, or call 1-800-NISSAN-1 for more information.

DELIVERY

VEHICLE COLORS:
EXT-BRILLIANT SILVER
INT: CHARCOAL

FINAL ASSEMBLY POINT:
AGUAS/ABV JMEX

TRANSPORT METHOD:
TRUCK

DEALER:
JIM M'LADY NISSAN
5656 NORTHWEST HIGHWAY
CRYSTAL LAKE, IL 60014

VIN: 3N1CP58V2L331122
EMS: 50 STATE EMISSIONS
MDL: 21010-531122 K23-G
OPT: F-892C03L92

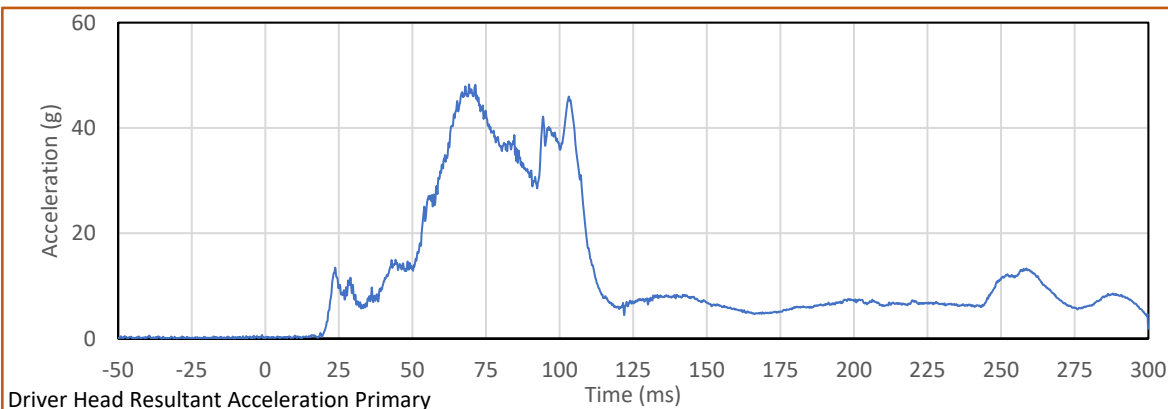
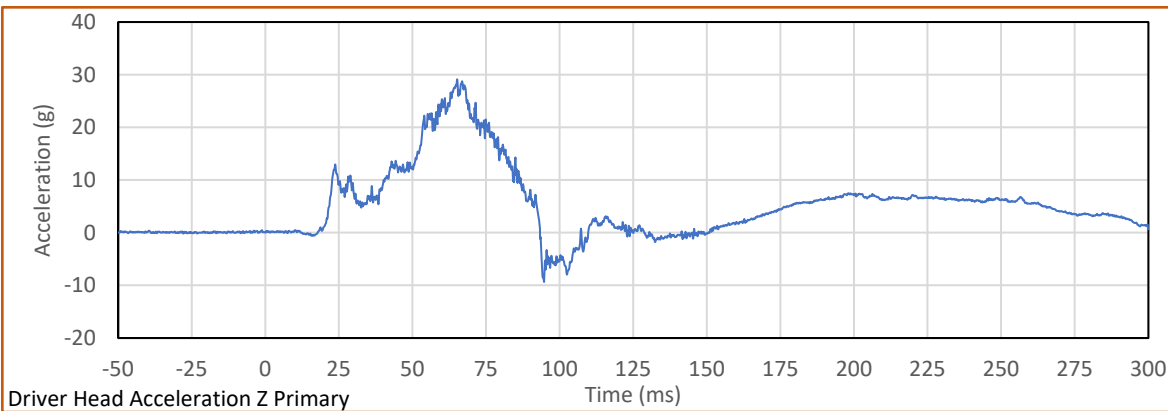
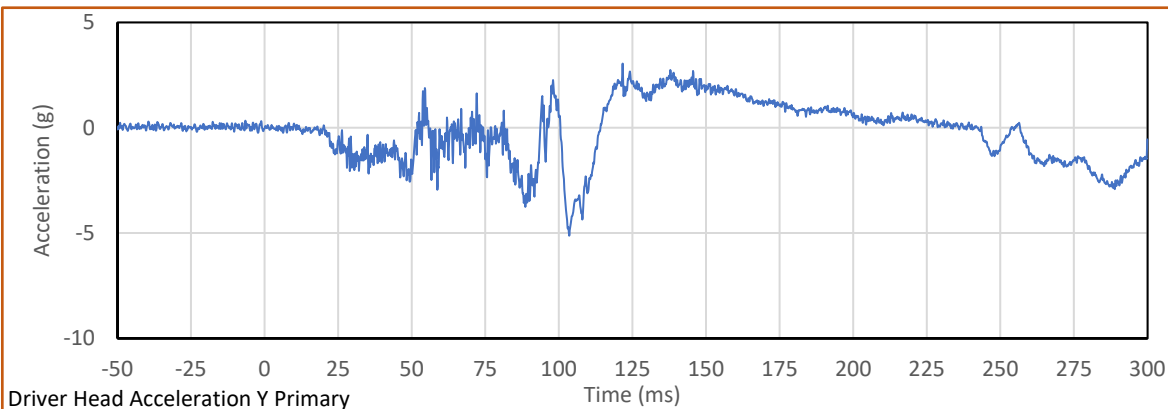
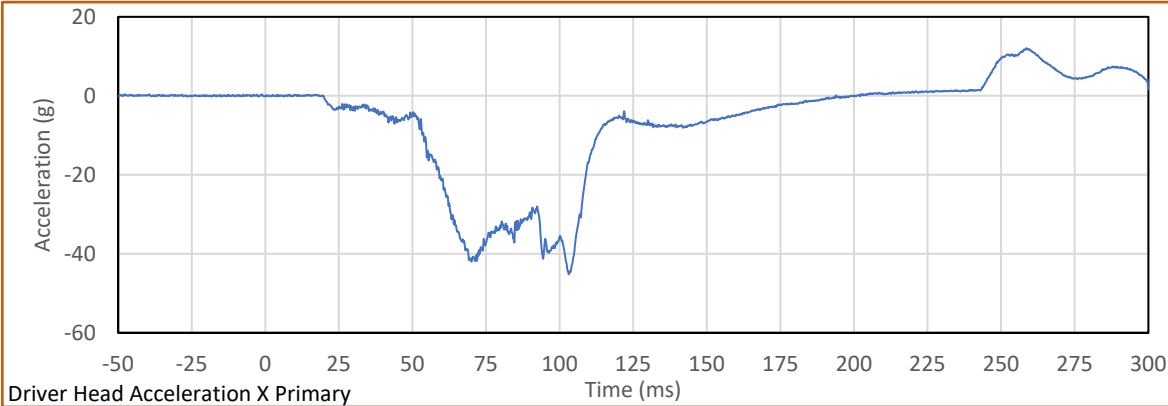
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FIGURE 83. Monroney Label Photograph

APPENDIX B
DUMMY RESPONSE DATA TRACES

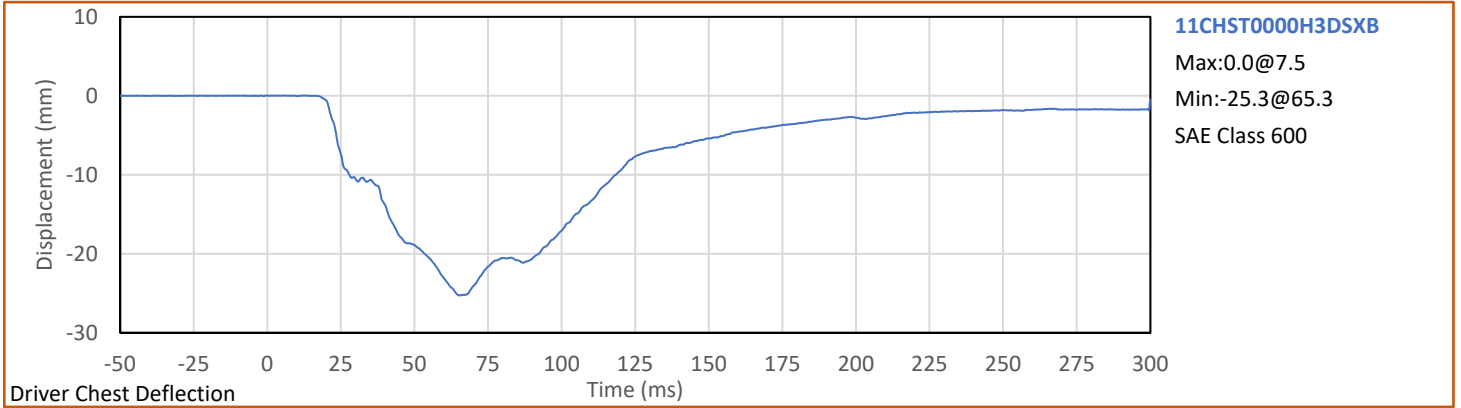
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Test Program: 56.3 km/h Frontal Impact NCAP Test

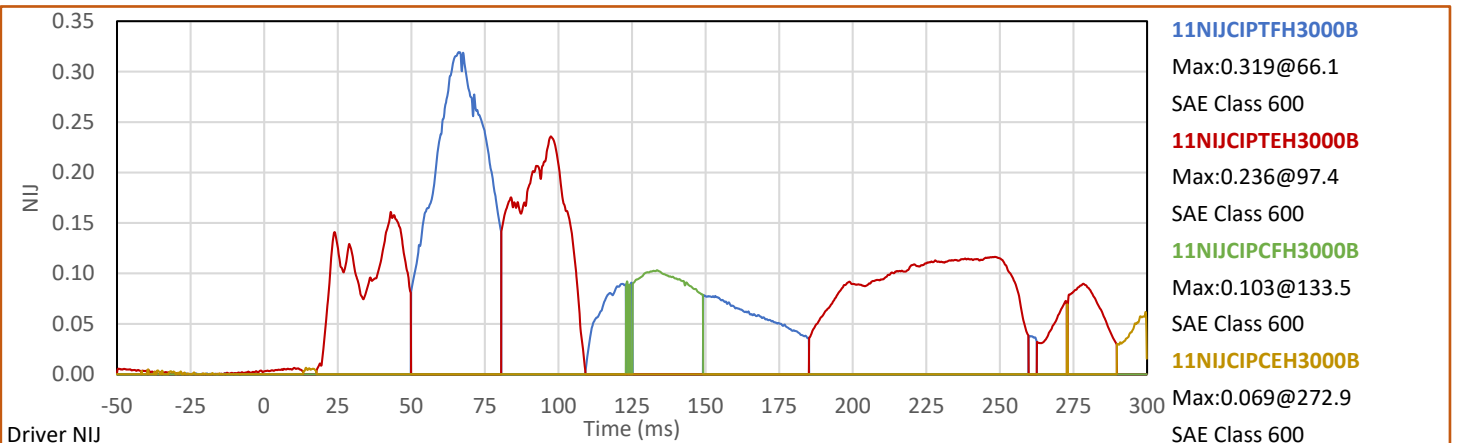
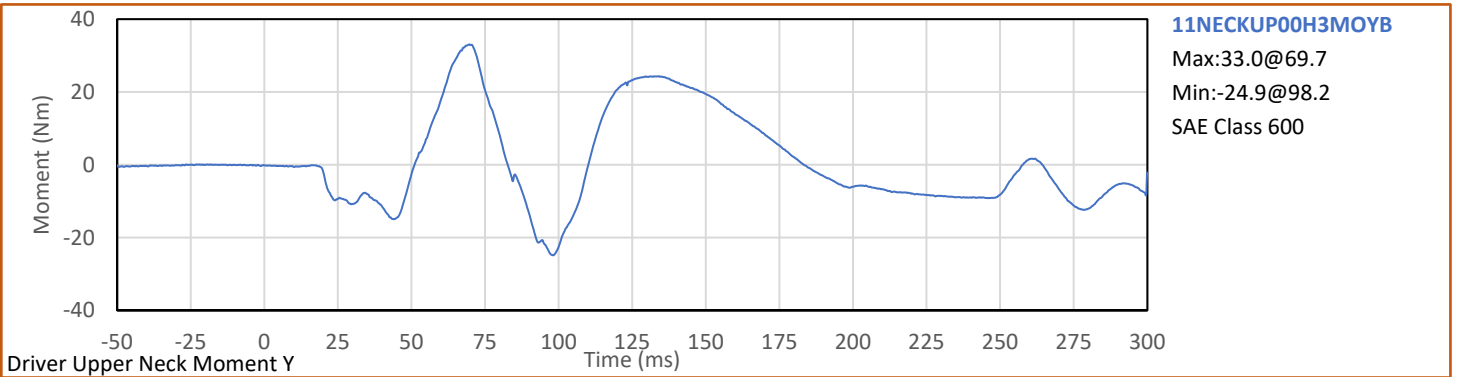
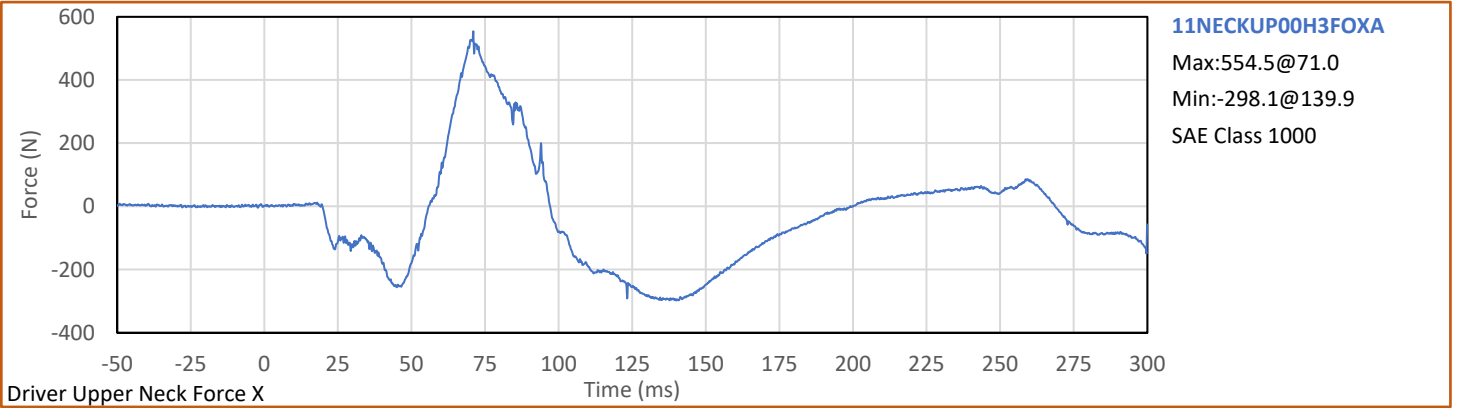
NHTSA No.: O20205202
Test Date: 9/29/2020

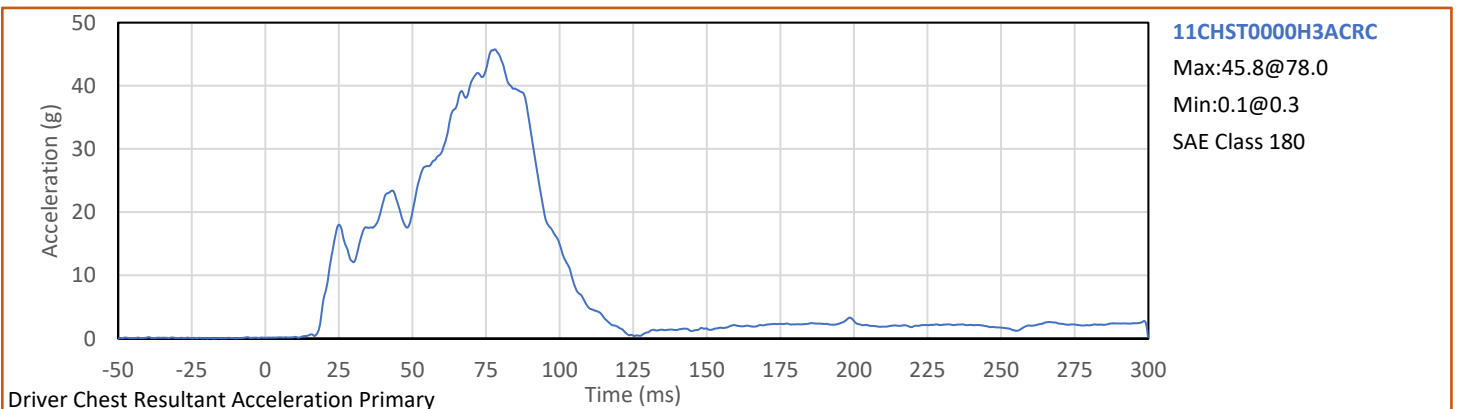
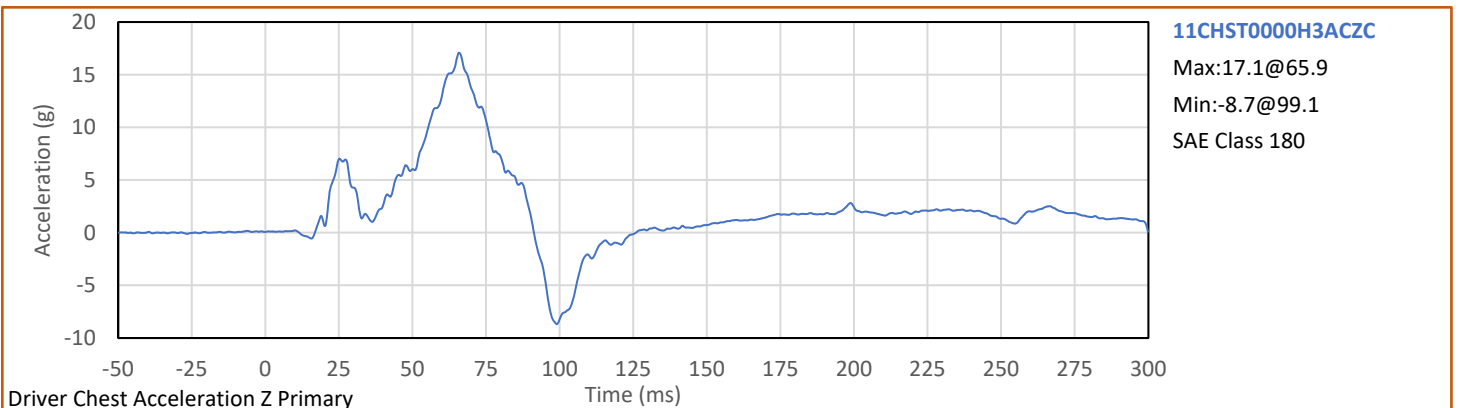
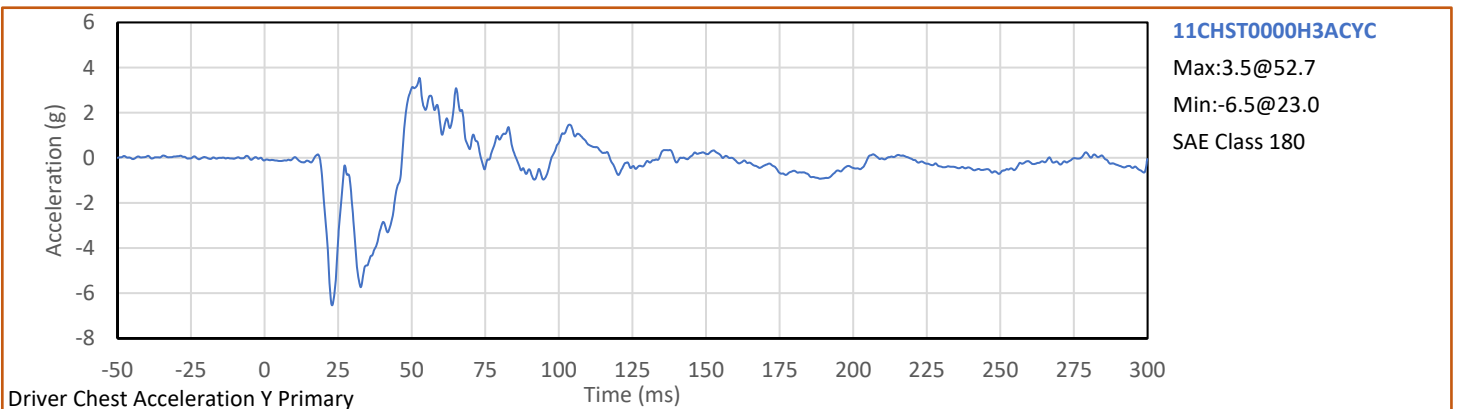
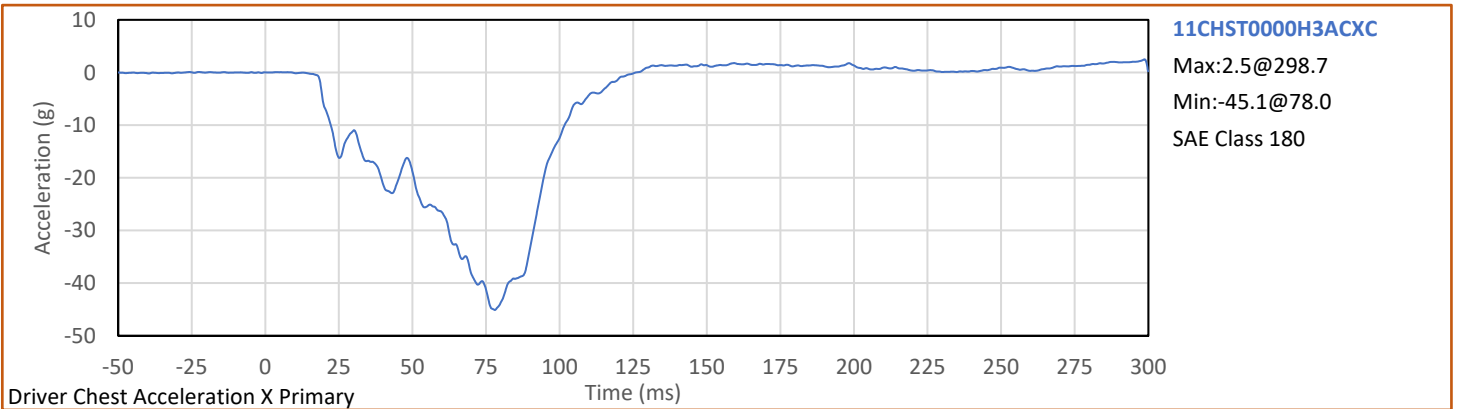


Test Vehicle: 2020 Nissan Kicks 5-Door SUV
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20205202
Test Date: 9/29/2020

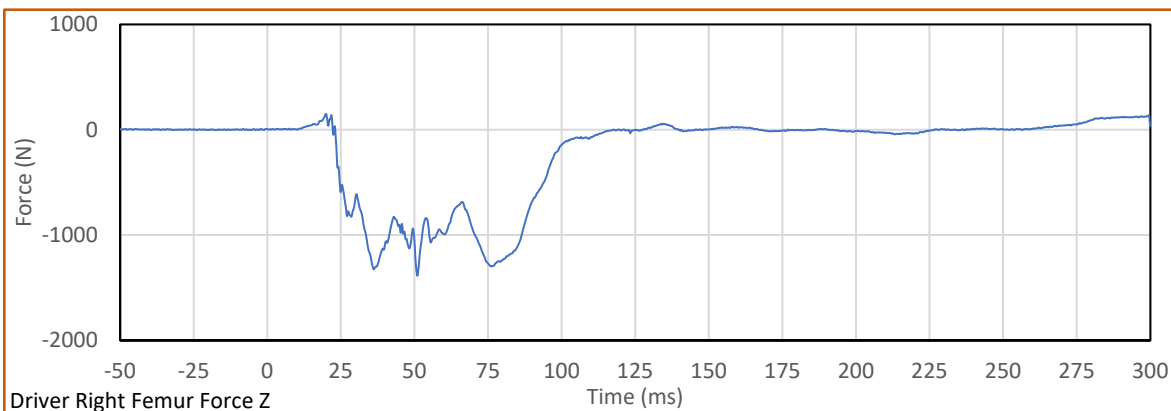
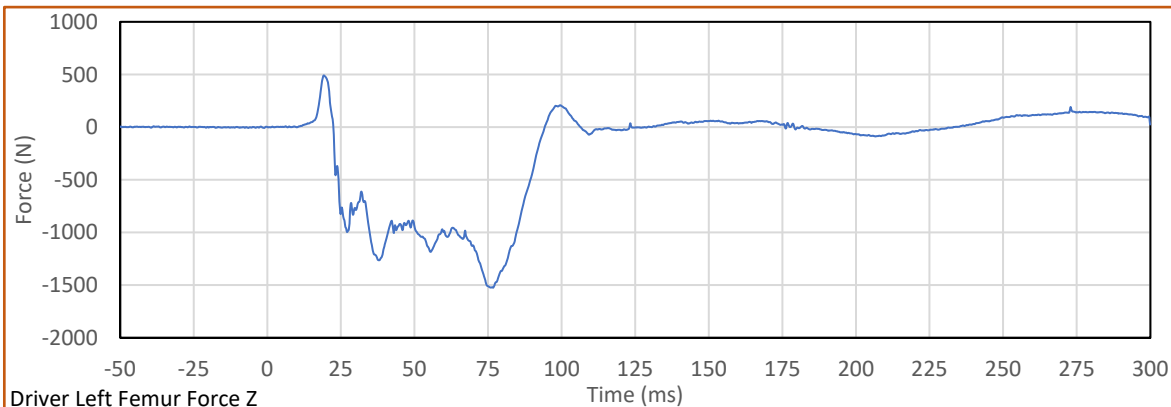






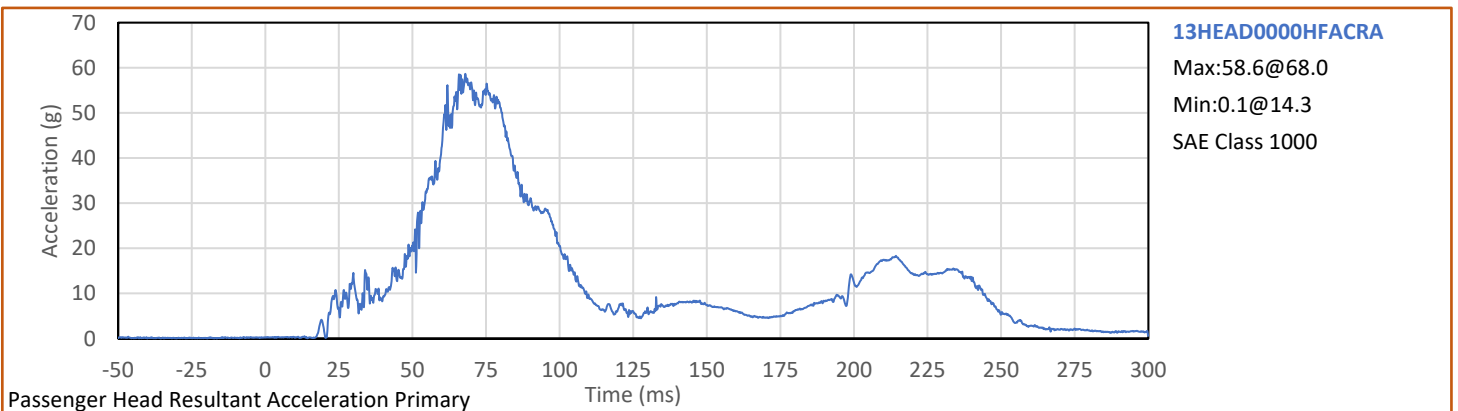
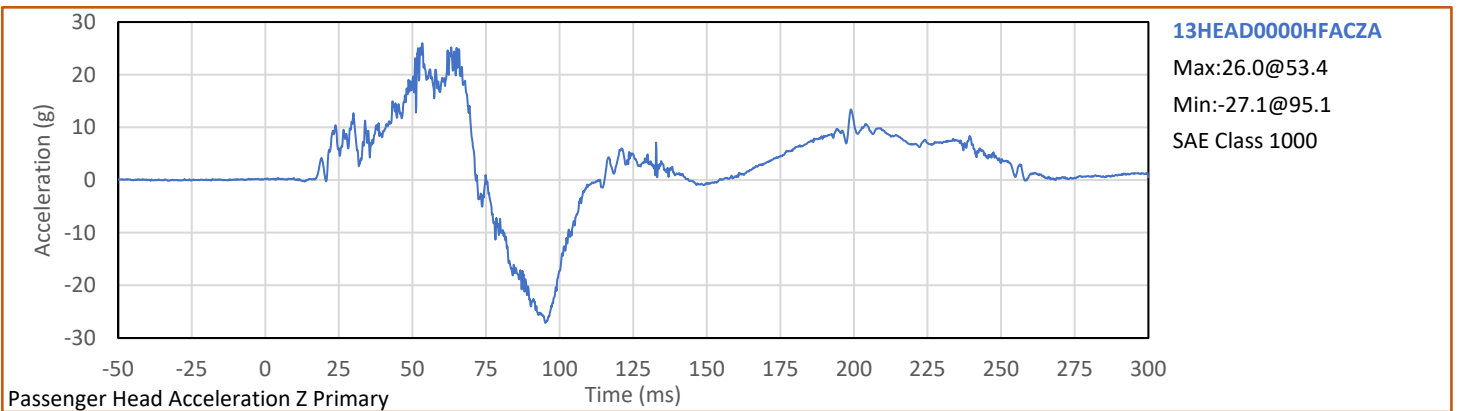
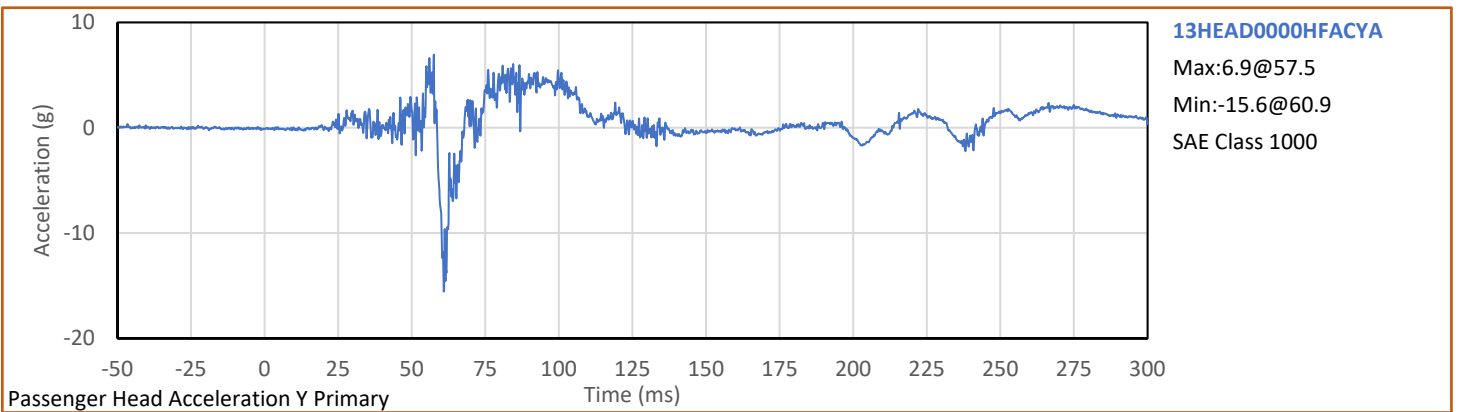
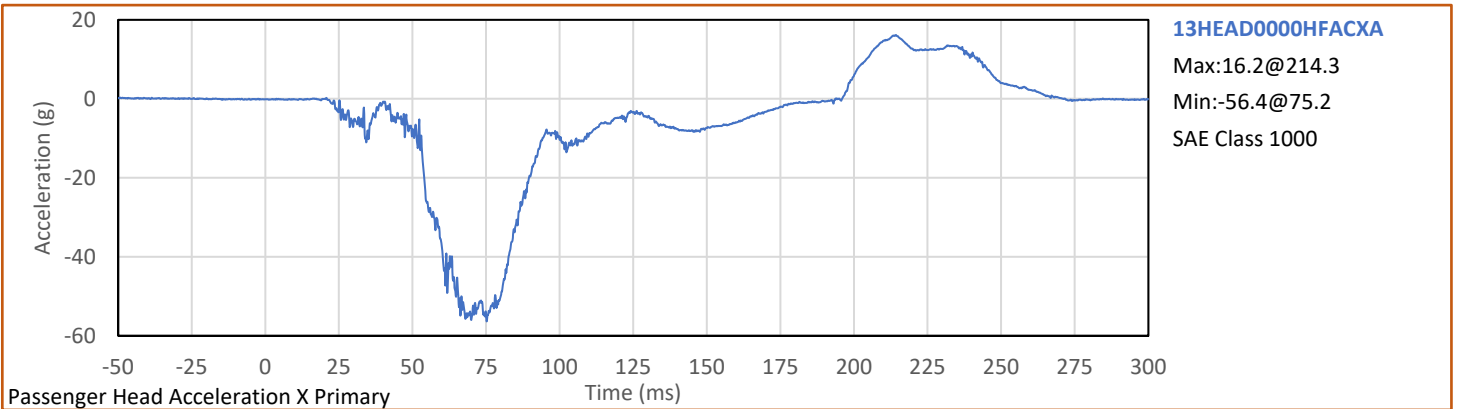
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Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20205202
Test Date: 9/29/2020



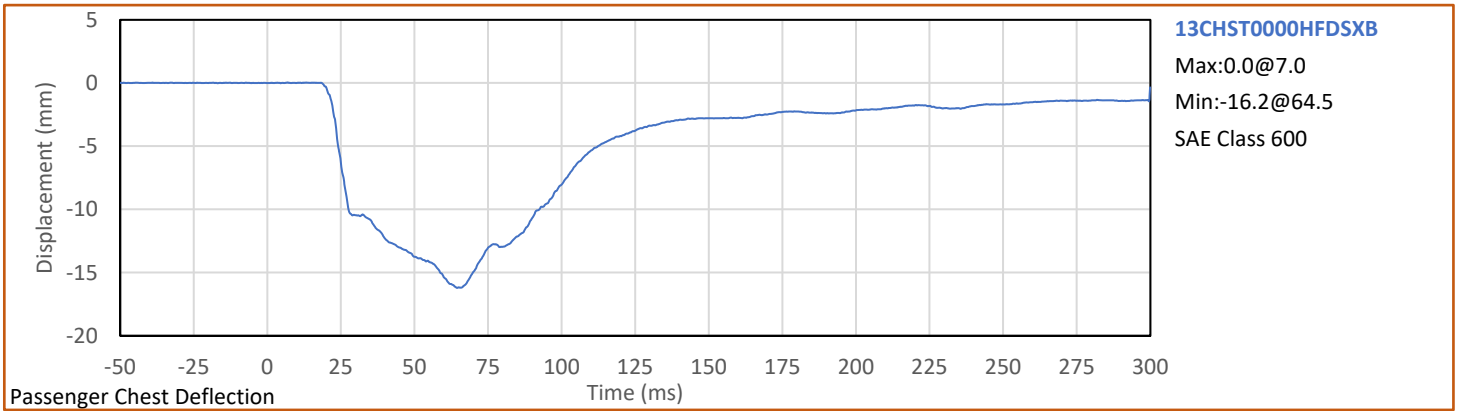
Test Vehicle: 2020 Nissan Kicks 5-Door SUV
Test Program: 56.3 km/h Frontal Impact NCAP Test

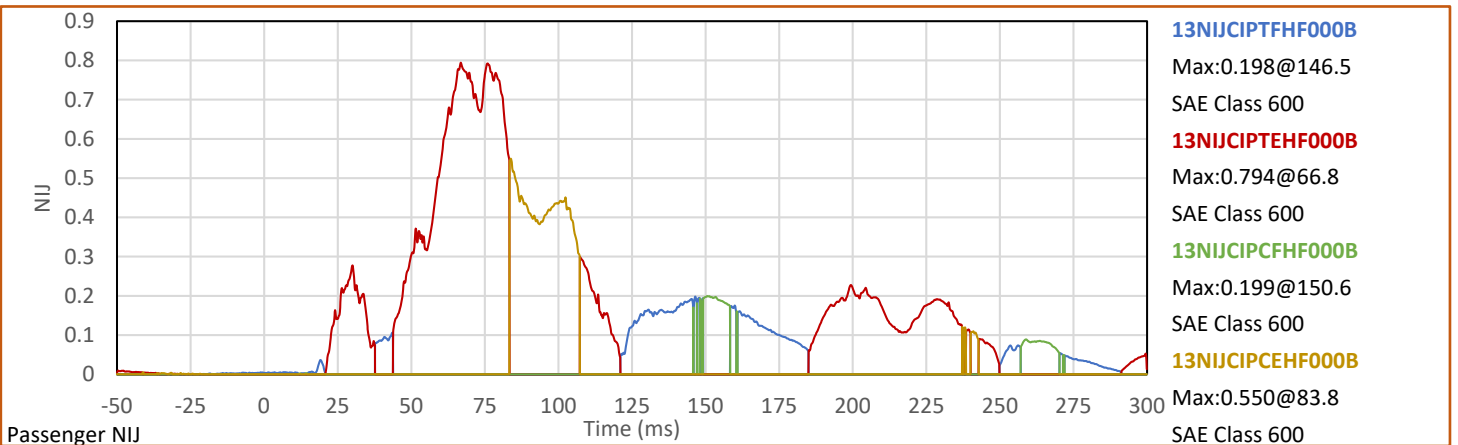
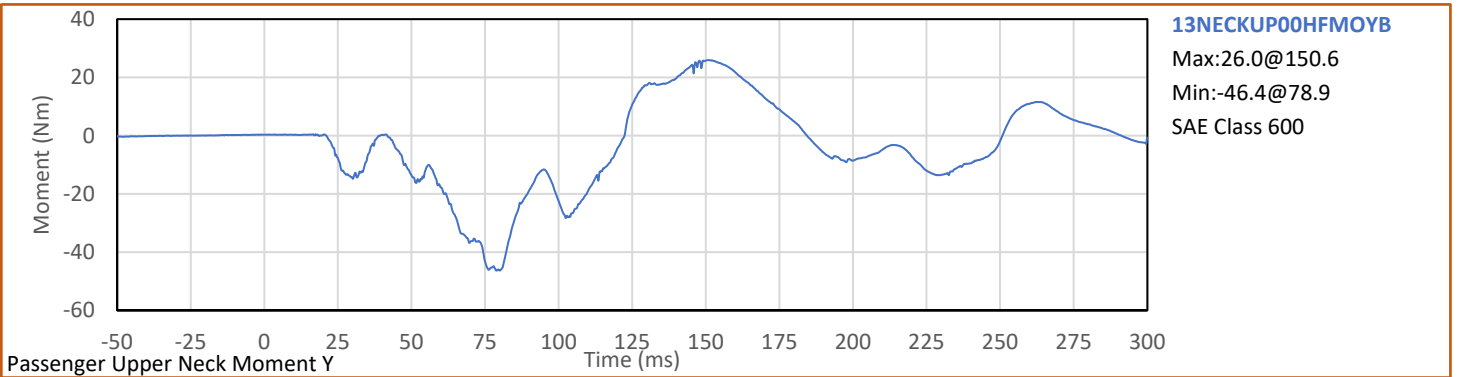
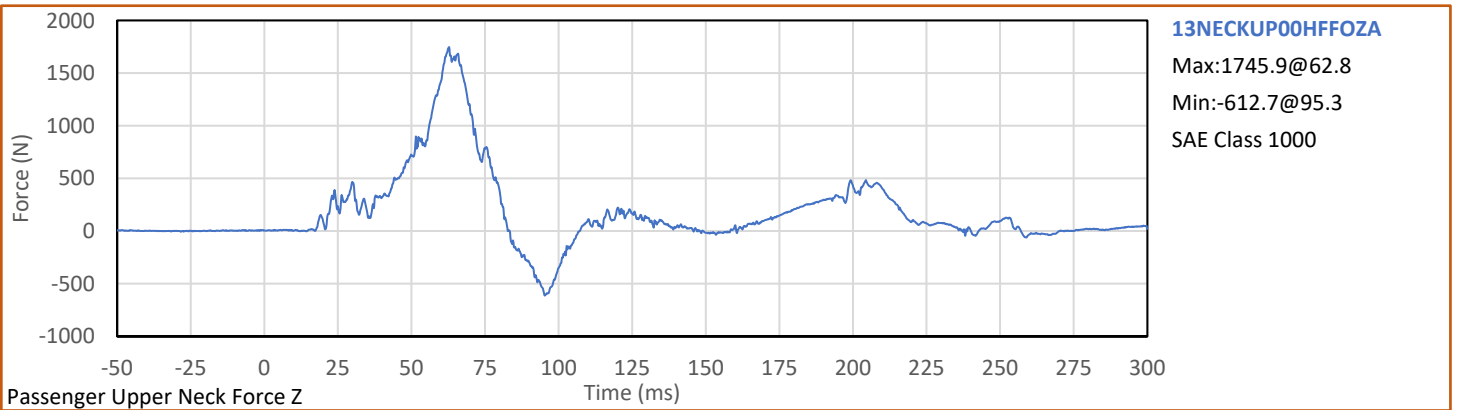
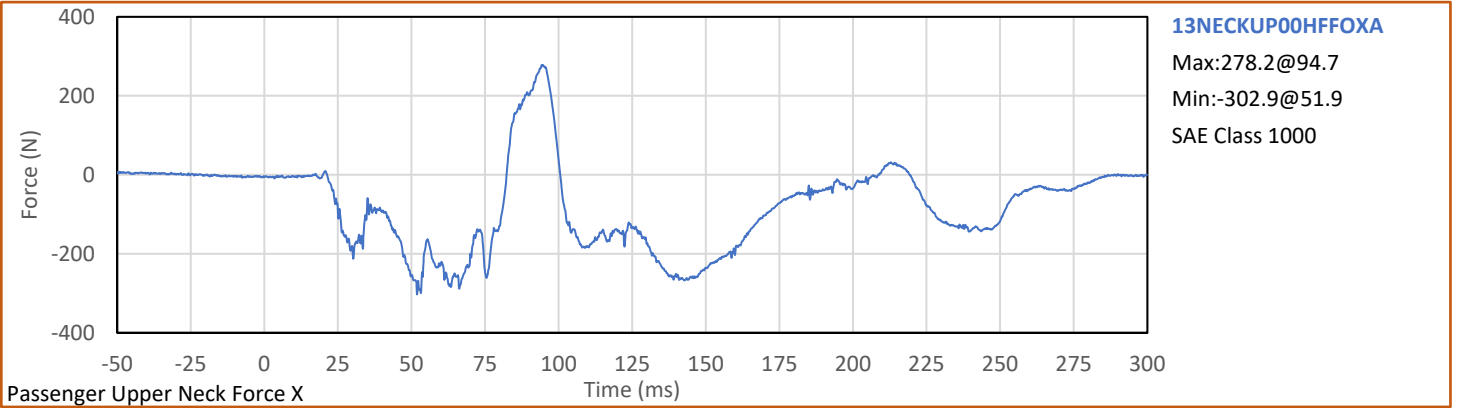
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Test Date: 9/29/2020

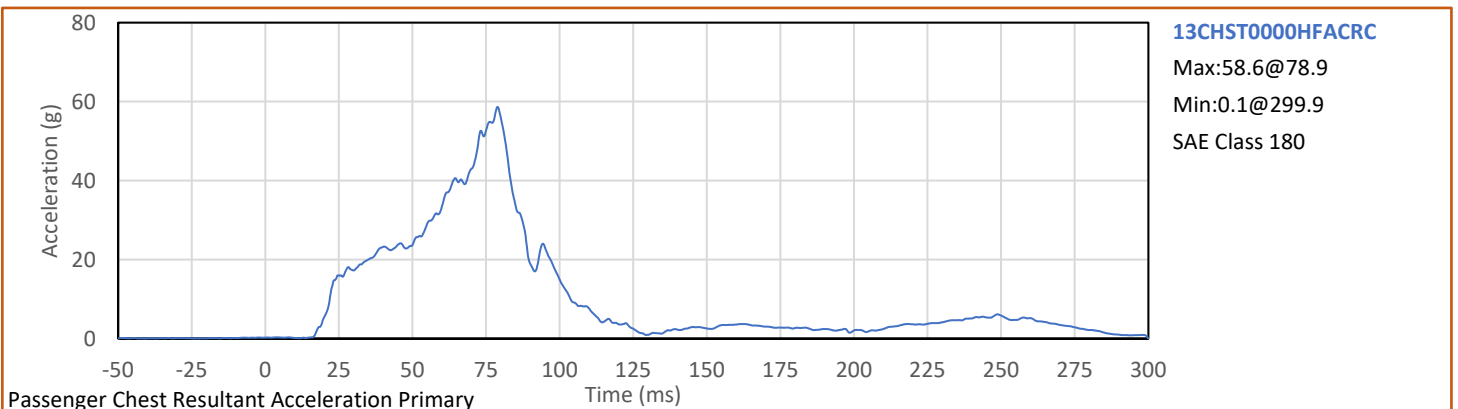
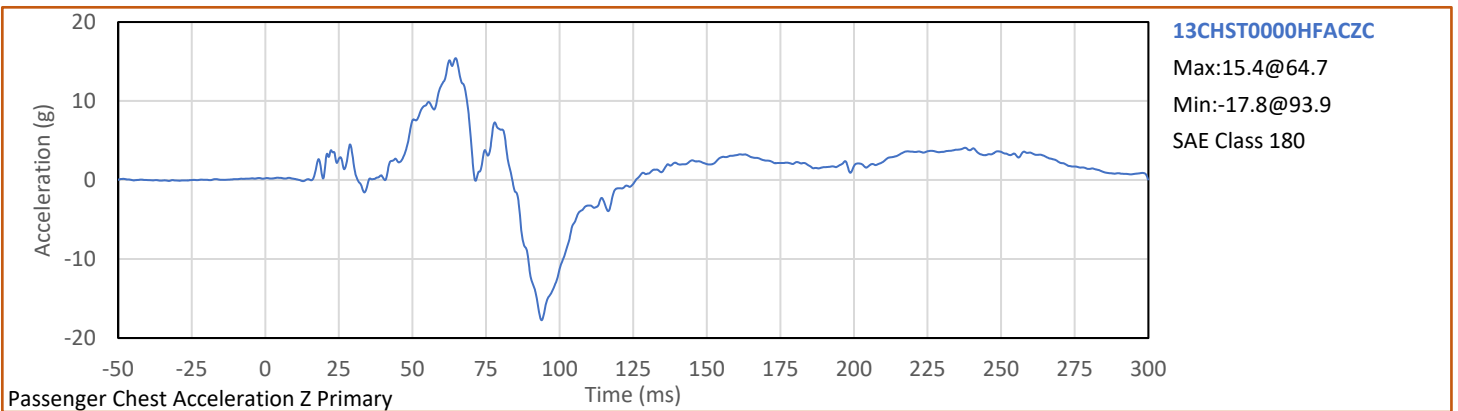
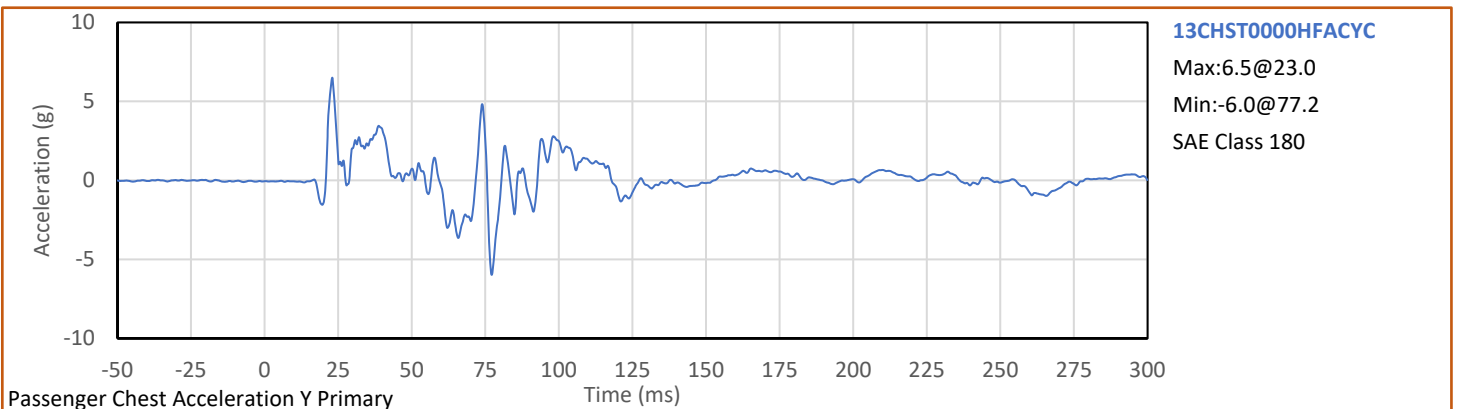
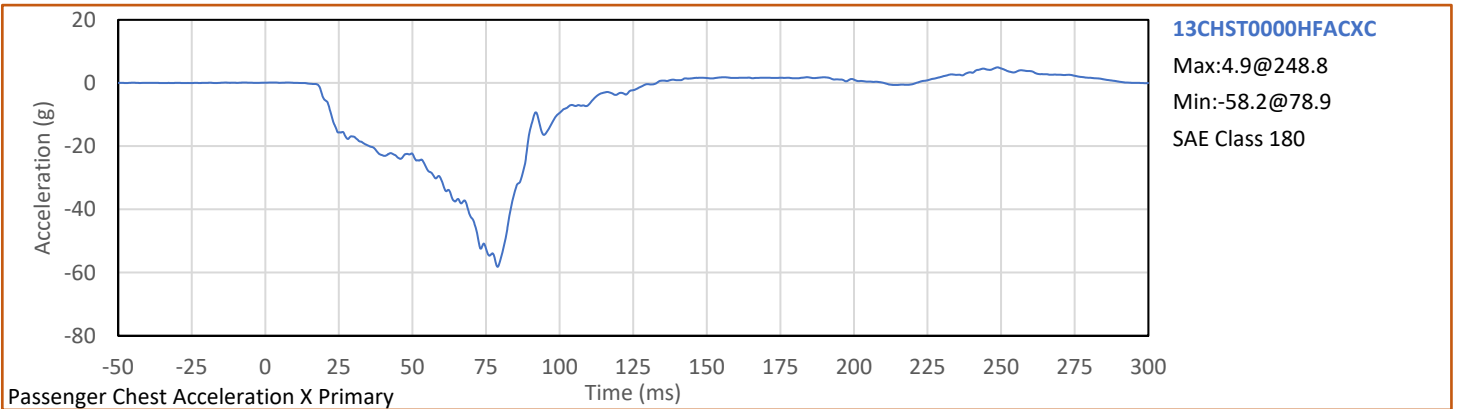


Test Vehicle: 2020 Nissan Kicks 5-Door SUV
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20205202
Test Date: 9/29/2020







Test Vehicle: 2020 Nissan Kicks 5-Door SUV
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20205202
Test Date: 9/29/2020

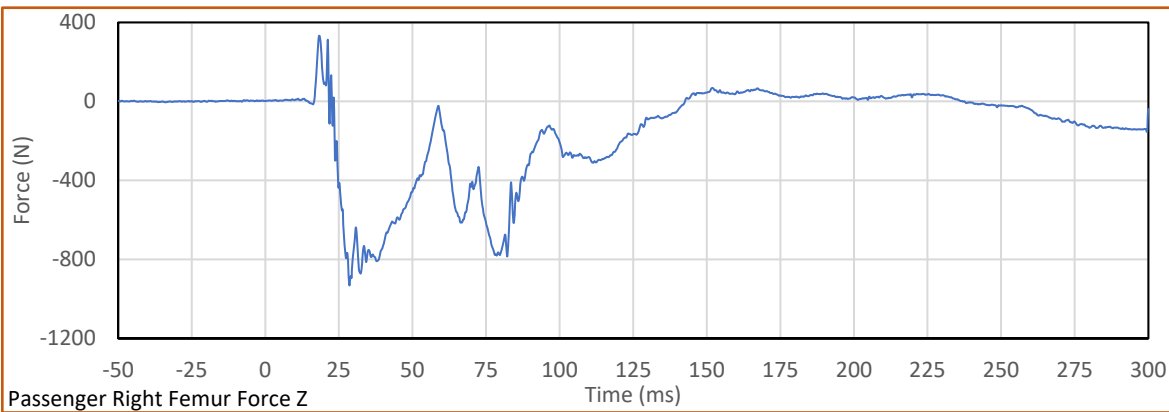
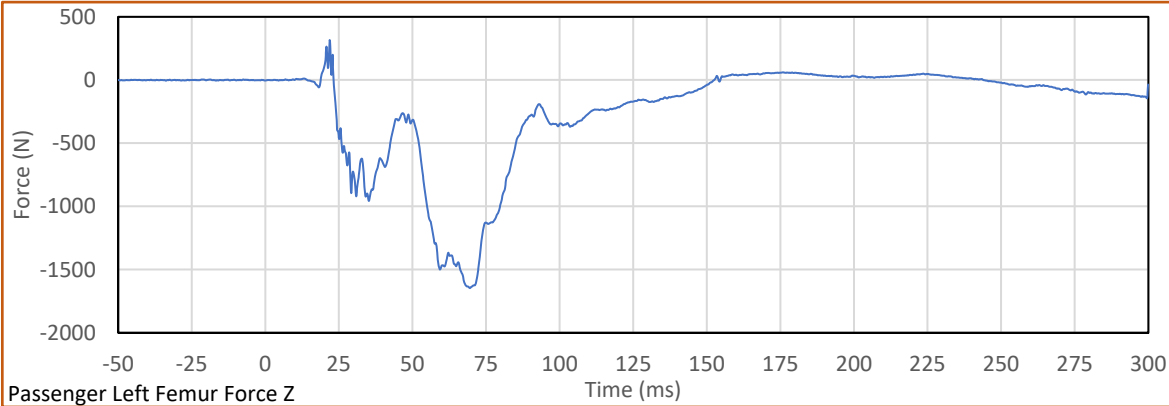


TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration X Primary	B-1
2	Driver Head Acceleration Y Primary	B-1
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5	Driver Chest X Deflection	B-2
6	Driver Upper Neck Force X	B-3
7	Driver Upper Neck Force Z	B-3
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10	Driver Chest Acceleration X Primary	B-4
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16	Passenger Head Acceleration X Primary	B-6
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25	Passenger Chest Acceleration X Primary	B-9
26	Passenger Chest Acceleration Y Primary	B-9
27	Passenger Chest Acceleration Z Primary	B-9
28	Passenger Chest Resultant Acceleration Primary	B-9
29	Passenger Left Femur Force Z	B-10
30	Passenger Right Femur Force Z	B-10

The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at www.nhtsa.gov

Driver Head X Acceleration Redundant
Driver Head Y Acceleration Redundant
Driver Head Z Acceleration Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver Left Femur Force Z Redundant
Driver Right Femur Force Z Redundant
Driver Left Upper Tibia Moment X
Driver Left Upper Tibia Moment Y
Driver Left Upper Tibia Force Z
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Upper Tibia Moment X
Driver Right Upper Tibia Moment Y
Driver Right Upper Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Fore Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Right Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Driver Shoulder Belt Force
Driver Lap Belt Force
Driver Head Angular Velocity X
Driver Head Angular Velocity Y
Driver Head Angular Velocity Z
Passenger Head X Acceleration Redundant
Passenger Head Y Acceleration Redundant
Passenger Head Z Acceleration Redundant
Passenger Upper Neck Force X
Passenger Upper Neck Force Z
Passenger Upper Neck Moment Y

Passenger Chest X Acceleration Redundant
Passenger Chest Y Acceleration Redundant
Passenger Chest Z Acceleration Redundant
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Left Femur Force Redundant
Passenger Right Femur Force Redundant
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Left Upper Tibia Force Z
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Shoulder Belt Force
Passenger Lap Belt Force
Passenger Head Angular Velocity X
Passenger Head Angular Velocity Y
Passenger Head Angular Velocity Z
Left Rear Seat Crossmember X
Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Left Rear Seat Crossmember X Redundant
Right Rear Seat Crossmember X Redundant
Vehicle Engine Top X
Vehicle Engine Bottom X
Load Cell Barrier Forces and Moments

APPENDIX C
DUMMY QUALIFICATION AND PERFORMANCE VERIFICATION

APPENDIX C
Pre-Test ATD Qualification and Performance Verification
Hybrid III 50th Percentile Male ATD
S/N: 360

ATD Serial No.: 360

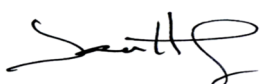
Test Date: 2020-09-10

Dummy Item	Inspect for	Comments	Damage	OK
Entire ATD	Perform general cleaning			✓
Outer Skin	Gashes, rips, cracks			✓
Head	Ballast secure			✓
	General appearance			✓
Neck bracket	Upper neck firmly attached to lower bracket			✓
Neck	Broken or cracked rubber			✓
	Looseness at the condyle joint			✓
Nodding block	Cracked or out of position			✓
Lumbar Spine	Broken or cracked rubber			✓
Ribs	Broken or bent ribs			✓
	Broken or bent rib supports			✓
	Damping material separated or cracked			✓
	Rubber bumpers in place			✓
Chest Displ. Assembly	Bent shaft			✓
	Slider arm riding in track			✓
Sensors	Check cables for cuts, tears			✓
	Check for damaged insulation			✓
Accelerometer Mounting	Head mounting secure			✓
	Chest mounting secure			✓
Knees	Skin condition			✓
	Insert (do not remove)			✓
	Casting			✓
Limbs	Normal movement and adjustment			✓
Knee Sliders	Wires intact			✓
	Rubber returned to "resting" position			✓
Pelvis	Broken			✓
Other	Describe below as needed			✓

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:



J. Hernandez

Approved By:



P. Puzzuto

ATD Serial No.: 360

Test Date: 2020-09-10

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	26	Pass
A - Total sitting height	mm	879	889	888	Pass
B - Shoulder pivot height	mm	505	521	516	Pass
C - 'H' point height	mm	84	89	87	Pass
D - 'H' point location from backline	mm	135	140	138	Pass
E - Shoulder pivot from backline	mm	84	94	91	Pass
F - Thigh clearance	mm	140	155	147	Pass
G - Back of elbow to wrist pivot	mm	290	305	295	Pass
H - Head back to backline	mm	41	46	45	Pass
I - Shoulder to elbow length	mm	330	345	338	Pass
J - Elbow rest height	mm	190	211	200	Pass
K - Buttock to knee length	mm	579	604	588	Pass
L - Popliteal length	mm	429	455	444	Pass
M - Knee pivot height	mm	485	500	493	Pass
N - Buttock popliteal length	mm	452	477	458	Pass
O - Chest depth without jacket	mm	213	229	220	Pass
P - Foot length	mm	251	267	256	Pass
V - Shoulder breadth	mm	422	437	429	Pass
W - Foot breadth	mm	91	107	105	Pass
Y - Chest circum. (w/chest jacket)	mm	970	1001	980	Pass
Z - Waist circum.	mm	836	866	851	Pass
AA - Location for chest circum.	mm	429	434	433	Pass
BB - Location for waist circum.	mm	226	231	228	Pass
			Overall Test Results		Pass

Technician:



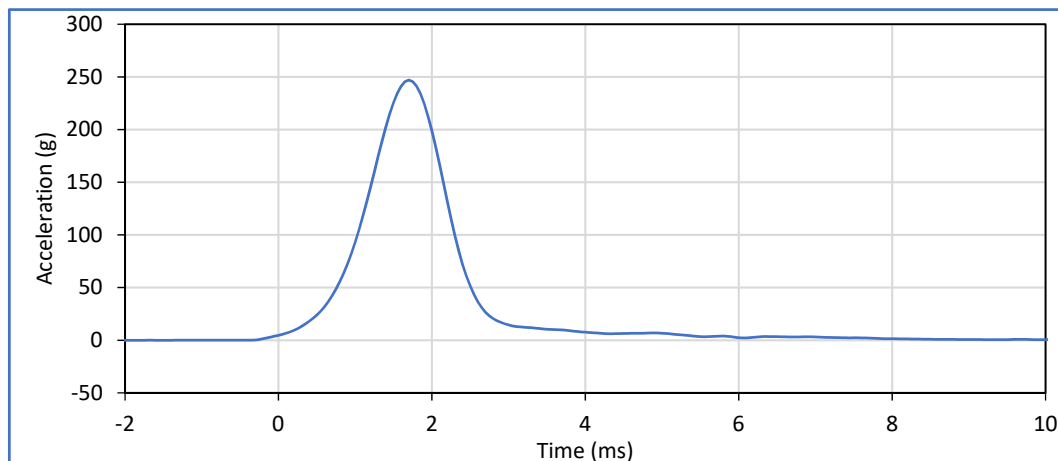
J. Hernandez

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 Relative Humidity	%	10	70	21	Pass
Peak Resultant Acceleration	g	225.0	275.0	247.0	Pass
Peak Lateral Acceleration	g	-15.0	15.0	3.8	Pass
Oscillations After Main Pulse	%	0.0	10.0	1.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	

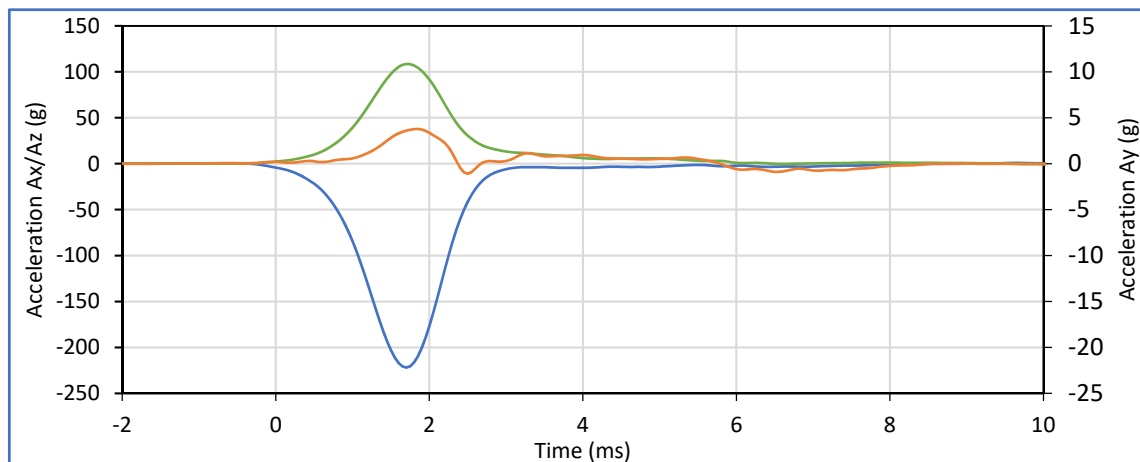


Head Resultant

Max:247.0@1.7

Min:0.5@9.4

SAE Class 1000



Head Ax

Max:0.9@9.7

Min:-221.8@1.7

SAE Class 1000

Head Ay

Max:3.8@1.9

Min:-1.1@2.5

SAE Class 1000

Head Az

Max:108.7@1.7

Min:-0.4@10.0

SAE Class 1000

Technician:

J. Hernandez

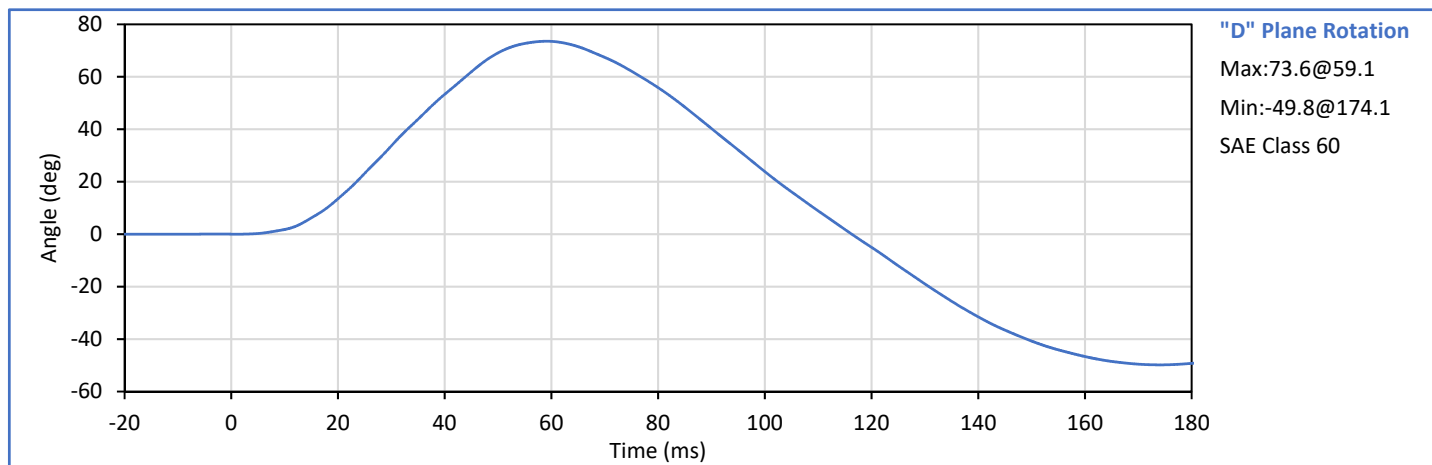
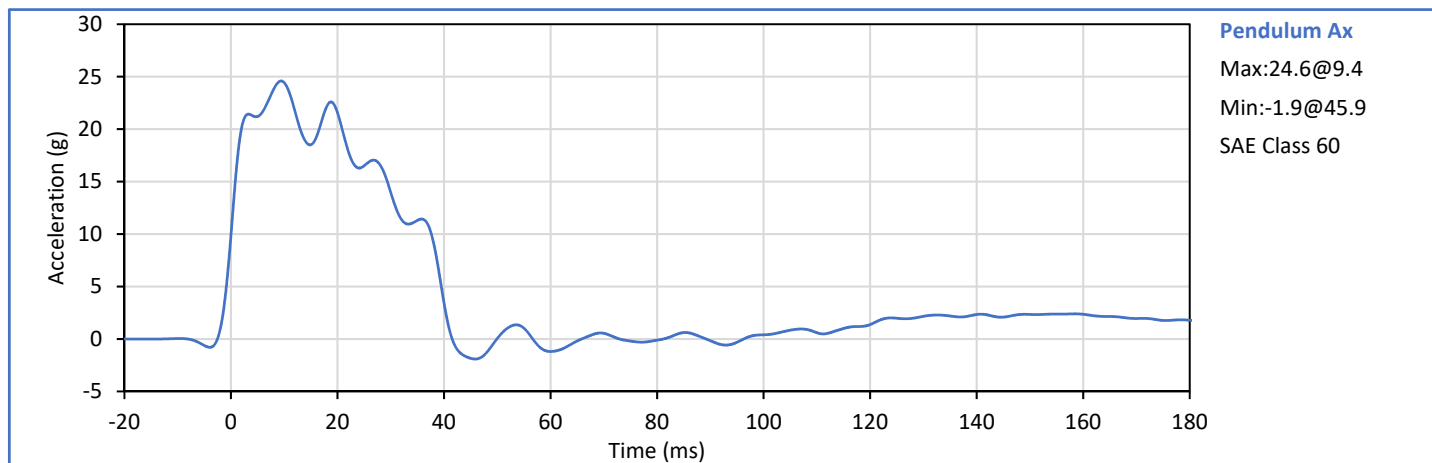
J. Hernandez

Approved By:

P. Puzzuto

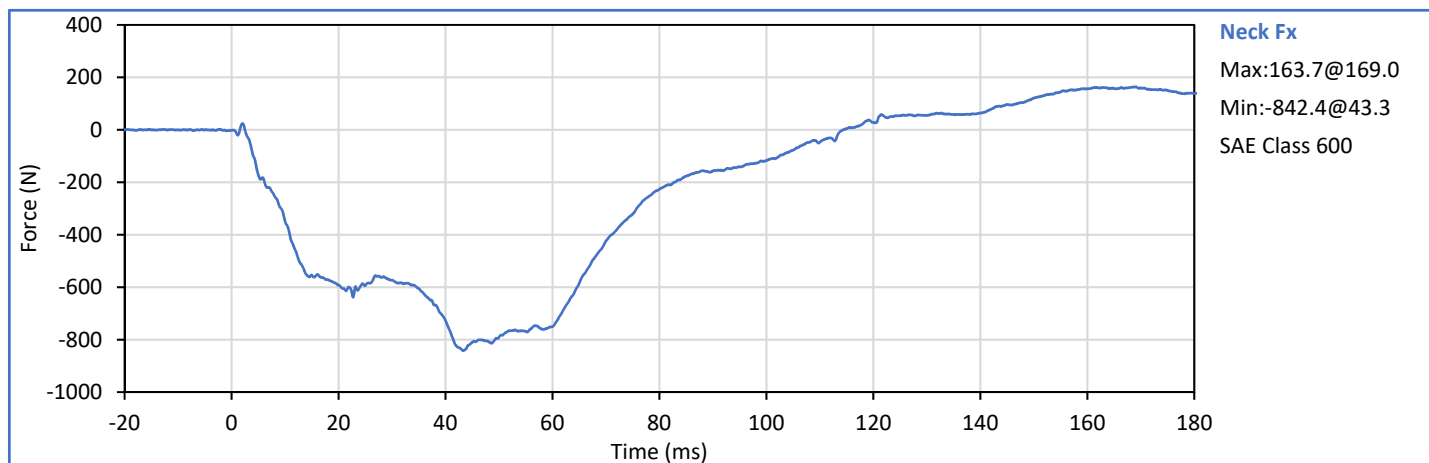
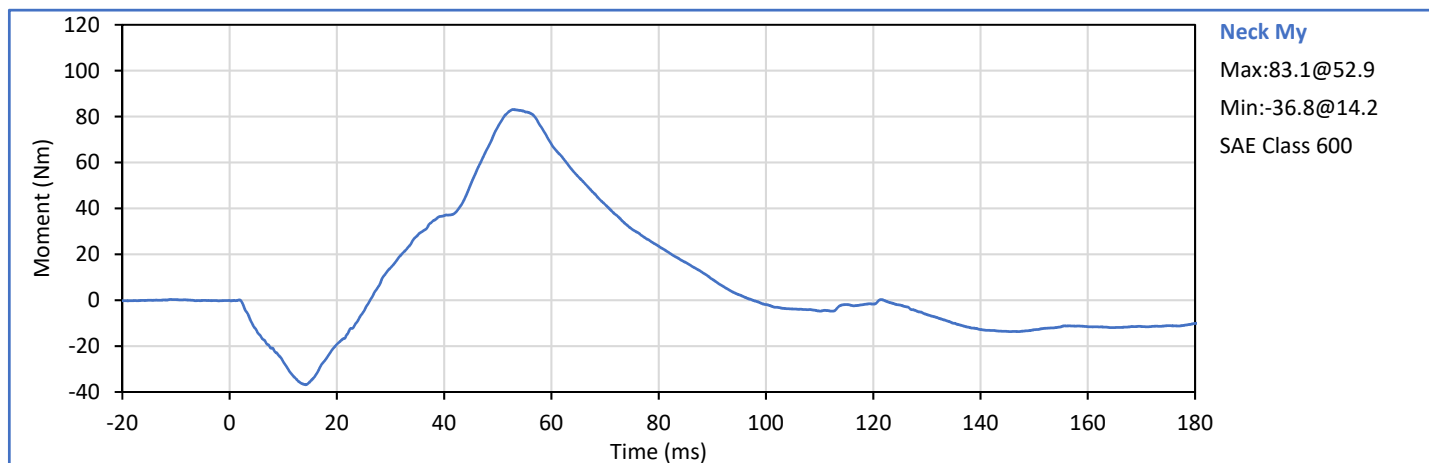
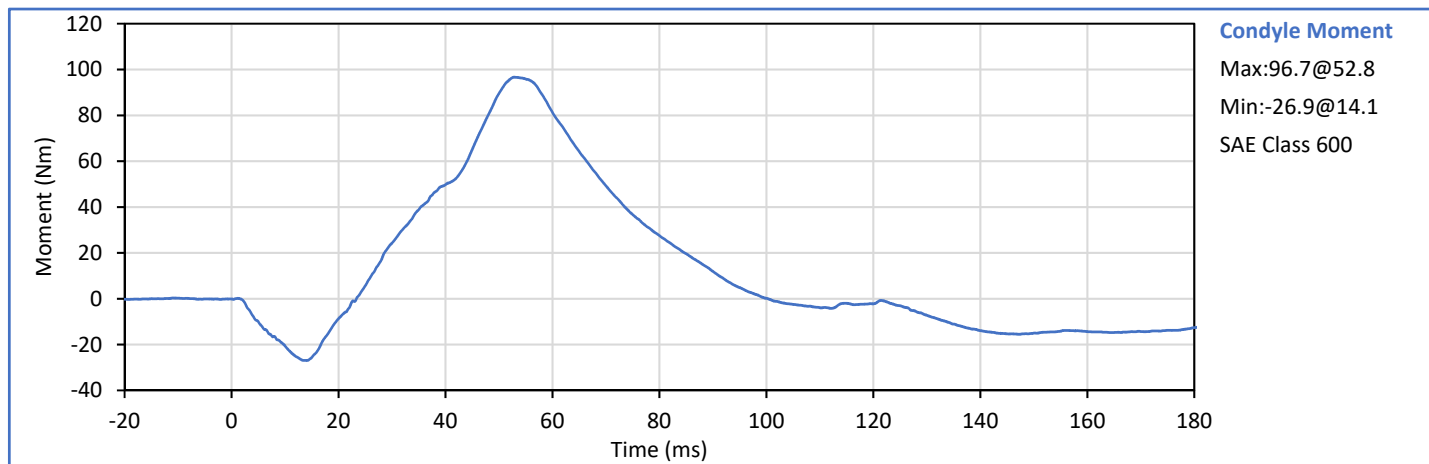
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	6.89	7.13	6.92	Pass
Pendulum Deceleration at 10 ms	g	22.5	27.5	24.4	Pass
Pendulum Deceleration at 20 ms	g	17.6	22.6	21.6	Pass
Pendulum Deceleration at 30 ms	g	12.5	18.5	14.0	Pass
Peak Pendulum Decel. after 30 ms	g	0.0	29.0	14.0	Pass
Deceleration Decay to Cross 5 g	ms	34.0	42.0	39.5	Pass
"D" Plane Rotation peak	deg	64.0	78.0	73.6	Pass
	ms	57.0	64.0	59.1	Pass
"D" Plane Rotation Decay To Zero	ms	113.0	128.0	116.4	Pass
Moment About Occipital Condyle	Nm	88.1	108.5	96.7	Pass
	ms	47.0	58.0	52.8	Pass
Moment Decay, Peak to Zero	ms	97.0	107.0	100.3	Pass
Overall Test Results					Pass

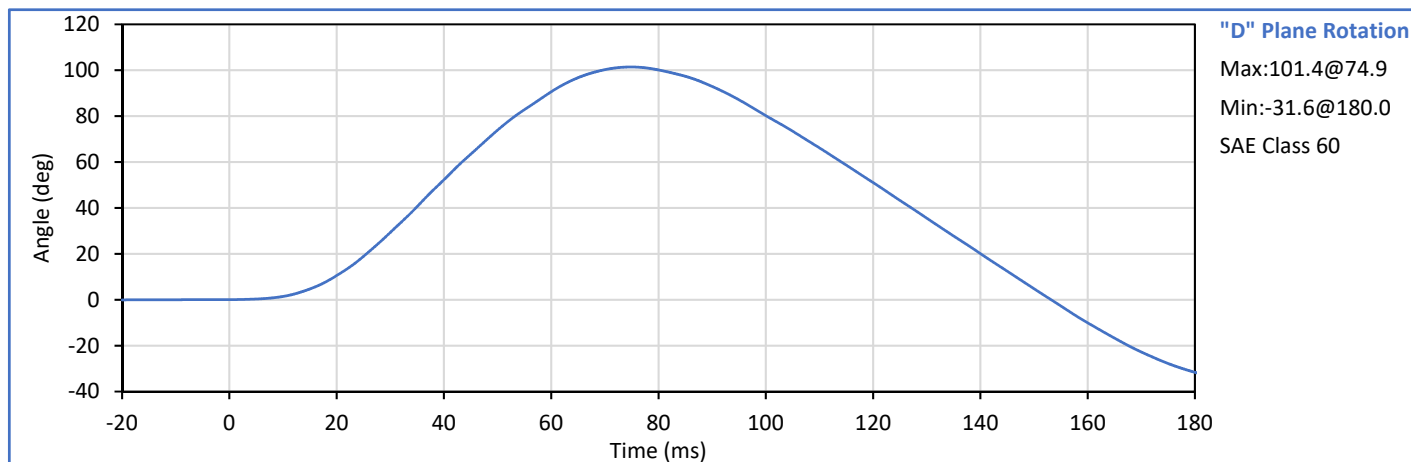
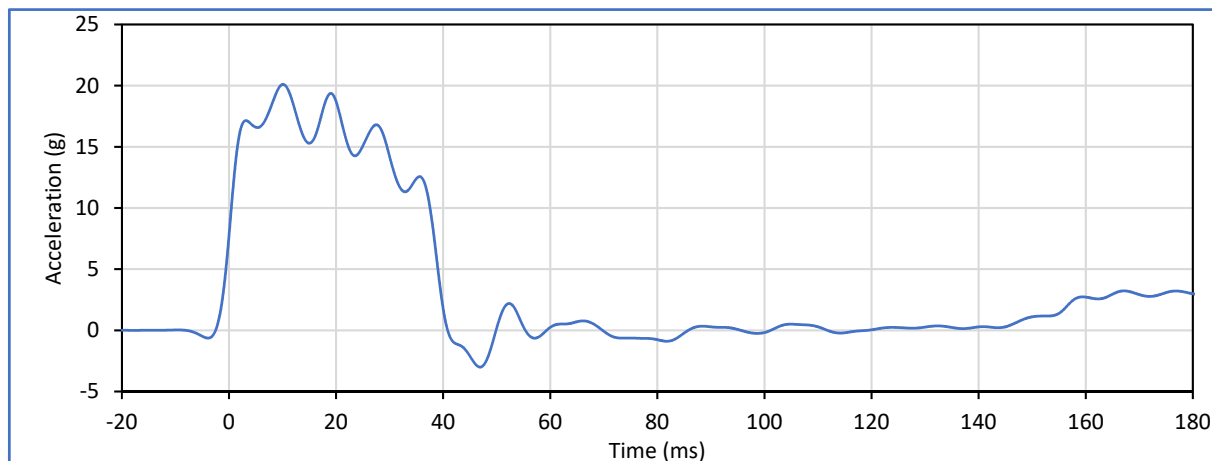


Technician: J. Hernandez

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 Relative Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	5.94	6.19	6.14	Pass
Pendulum Deceleration at 10 ms	g	17.2	21.2	20.1	Pass
Pendulum Deceleration at 20 ms	g	14.0	19.0	18.7	Pass
Pendulum Deceleration at 30 ms	g	11.0	16.0	14.2	Pass
Peak Pendulum Decel. after 30 ms	g	0.0	22.0	14.2	Pass
Deceleration Decay to Cross 5 g	ms	38.0	46.0	39.0	Pass
"D" Plane Rotation peak	deg	81.0	106.0	101.4	Pass
	ms	72.0	82.0	74.9	Pass
"D" Plane Rotation Decay To Zero	ms	147.0	174.0	153.3	Pass
Moment About Occipital Condyle	Nm	-79.9	-52.9	-78.0	Pass
	ms	65.0	79.0	69.4	Pass
Moment Decay, Peak to Zero	ms	120.0	148.0	138.6	Pass
Overall Test Results					Pass

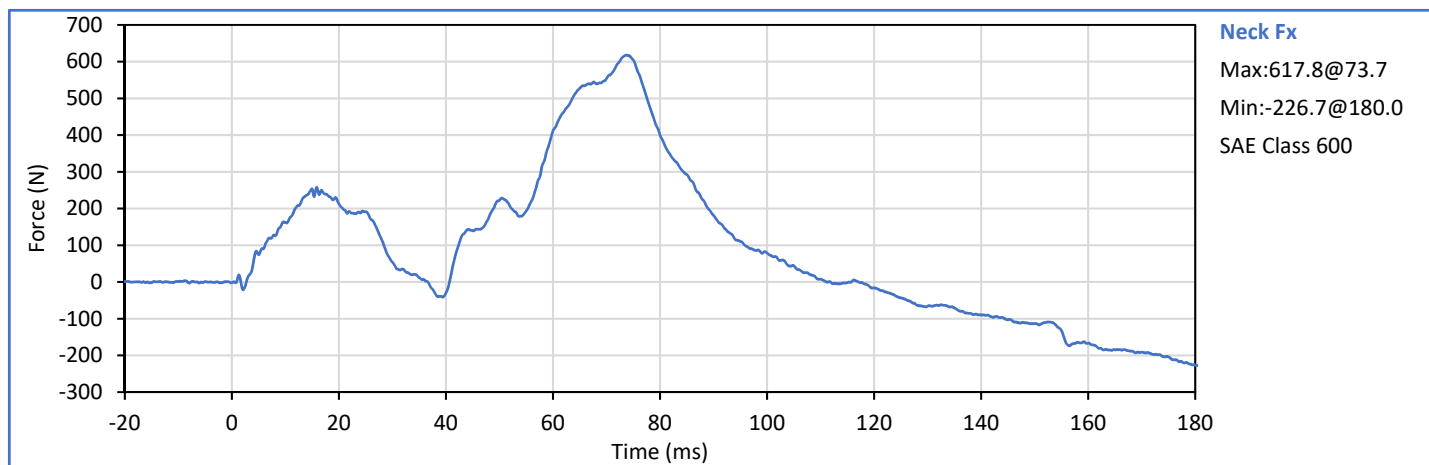
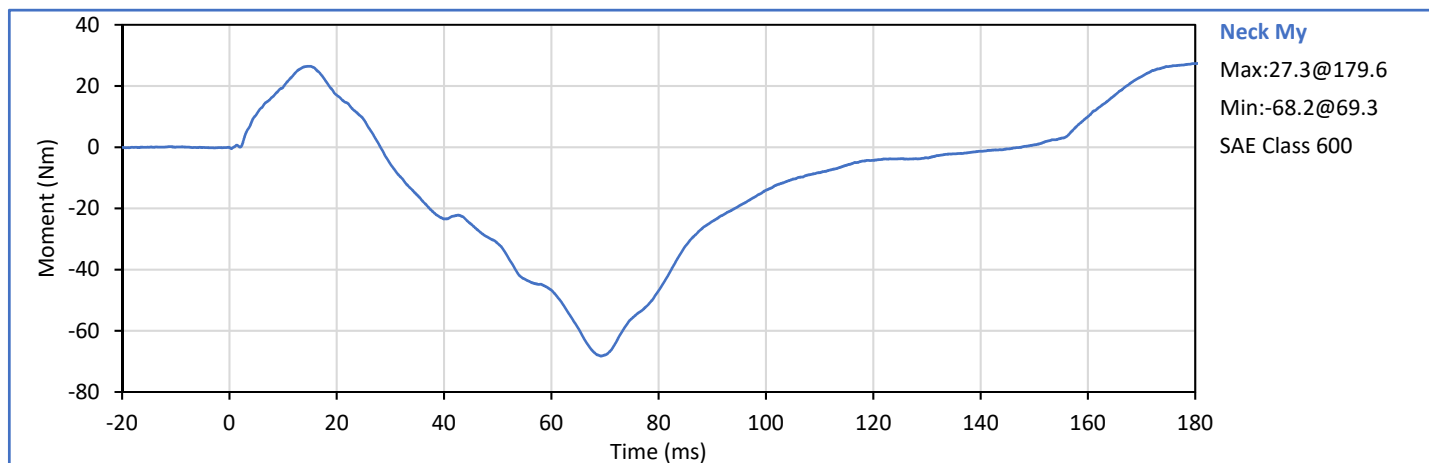
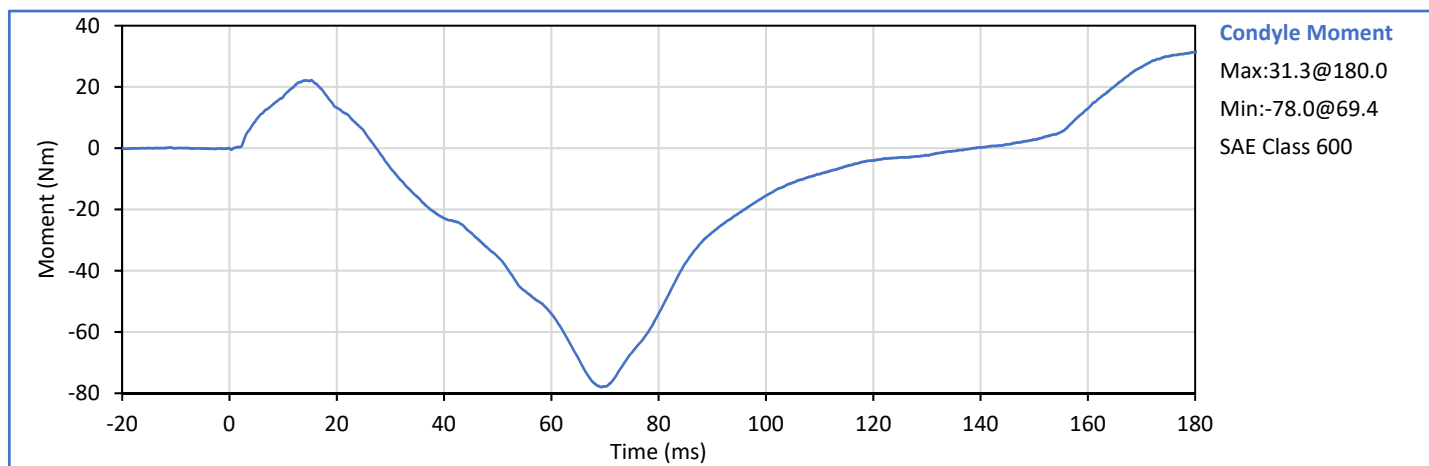


Technician: _____

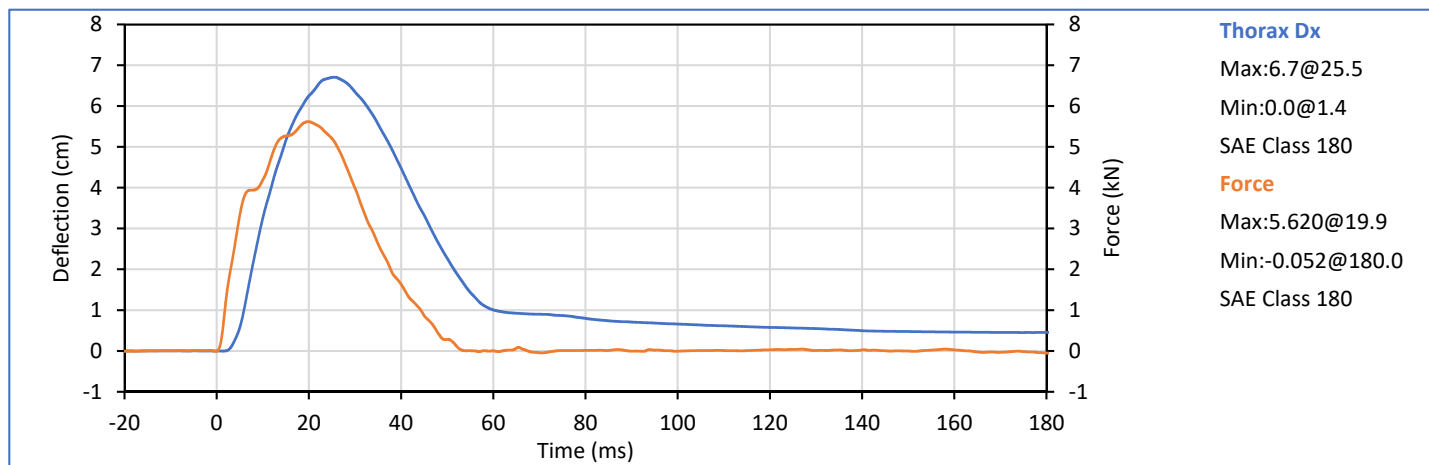
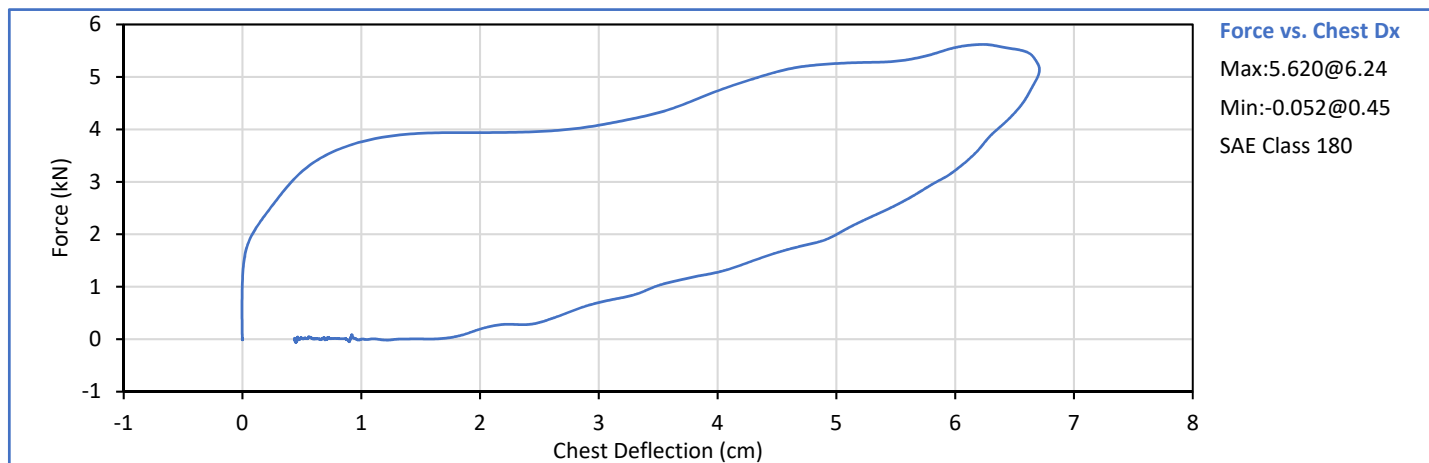
J. Hernandez

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 Relative Humidity	%	10	70	22	Pass
Probe Velocity	m/s	6.58	6.82	6.73	Pass
Peak Chest Deflection	cm	6.35	7.26	6.71	Pass
Peak Probe Force	kN	5.159	5.893	5.620	Pass
Internal Hysteresis	%	69.0	85.0	71.3	Pass
Overall Test Results				Pass	Pass



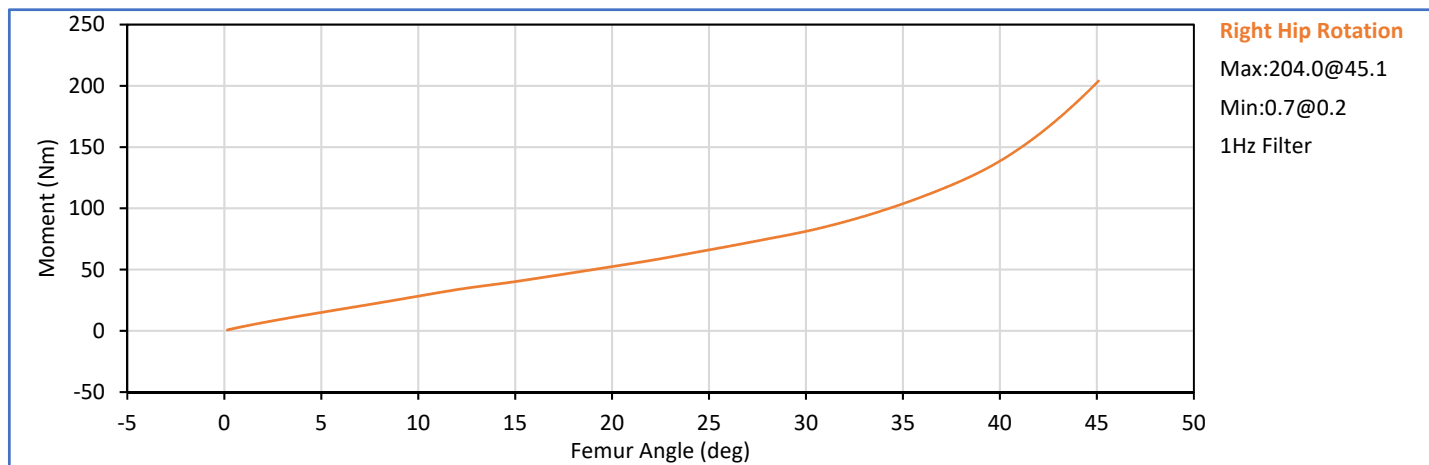
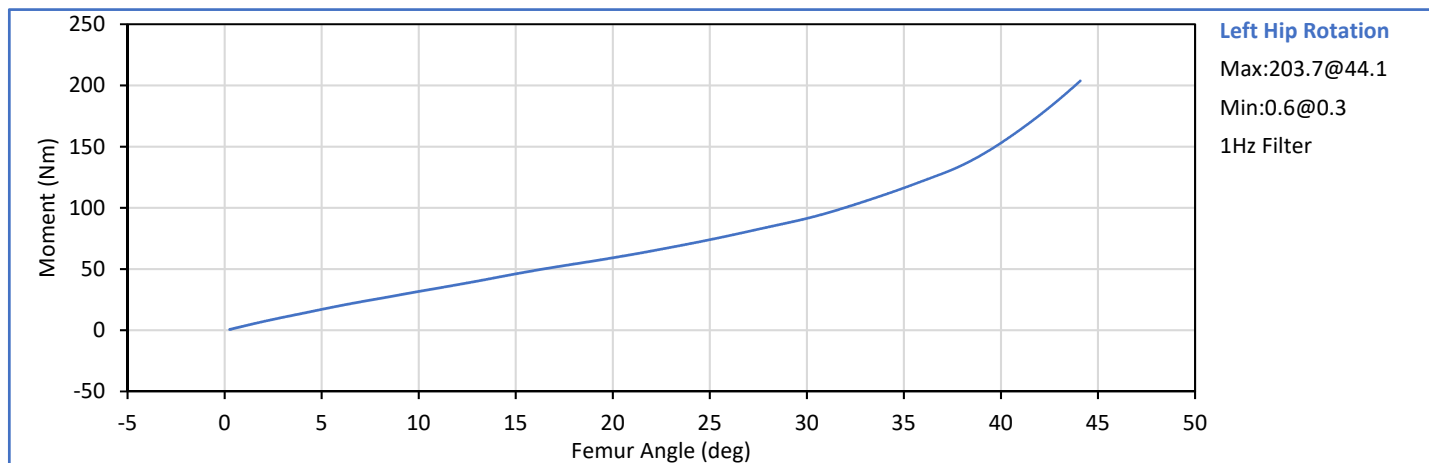
Technician: _____

J. Hernandez

Approved By: _____

P. Puzzuto

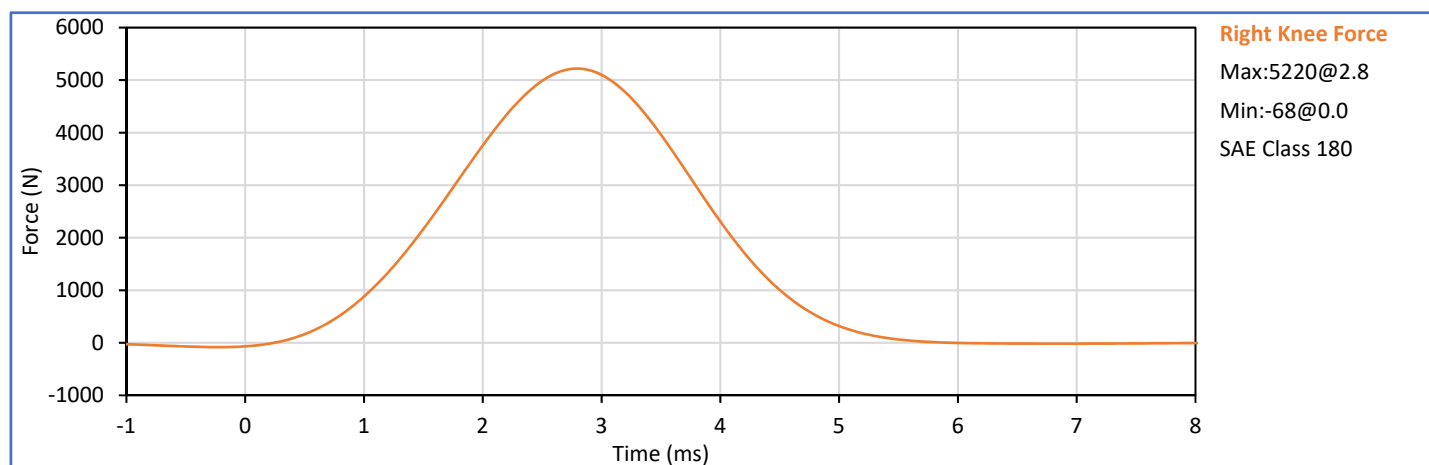
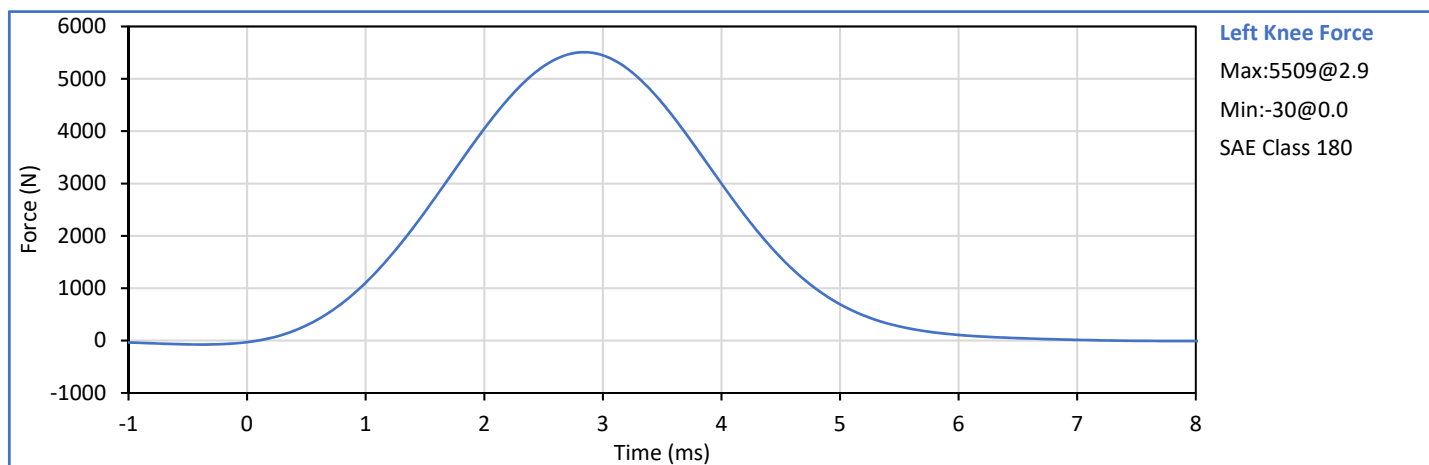
	Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
	Laboratory Temperature	°C	18.9	25.6	21.2	Pass
	Laboratory Relative Humidity	%	10	70	21	Pass
Left Hip	Left Hip Rotation Rate	deg/s	5.0	10.0	6.2	Pass
	Left Femur Torque at 30°	Nm	0.0	95.0	91.4	Pass
	Left Hip Rotation at 203 Nm	deg	40.0	50.0	44.0	Pass
Right Hip	Right Hip Rotation Rate	deg/s	5.0	10.0	6.3	Pass
	Right Femur Torque at 30°	Nm	0.0	95.0	81.3	Pass
	Right Hip Rotation at 203 Nm	deg	40.0	50.0	45.0	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	18.9	25.6	21.4	Pass
	Laboratory Relative Humidity	%	10	70	21	Pass
Left	Probe Velocity	m/s	2.070	2.130	2.097	Pass
Knee	Peak Resistive Force	N	4715	5782	5509	Pass
Right	Probe Velocity	m/s	2.070	2.130	2.098	Pass
Knee	Peak Resistive Force	N	4715	5782	5220	Pass
Overall Test Results					Pass	



Technician: J. Hernandez

Approved By: P. Puzzuto

APPENDIX C
Pre-Test ATD Qualification and Performance Verification
Hybrid III 5th Percentile Female ATD
S/N: 141

Dummy Item	Inspect for	Comments	Damage	Okay
Entire ATD	Perform general cleaning			✓
Outer Skin	Gashes, rips, cracks			✓
Head	Ballast secure			✓
	General appearance			✓
Neck bracket	Upper neck firmly attached to lower bracket			✓
Neck	Broken or cracked rubber			✓
	Looseness at the condyle joint			✓
Nodding block	Cracked or out of position			✓
Lumbar Spine	Broken or cracked rubber			✓
Ribs	Broken or bent ribs			✓
	Broken or bent rib supports			✓
	Damping material separated or cracked			✓
	Rubber bumpers in place			✓
Chest Displ. Assembly	Bent shaft			✓
	Slider arm riding in track			✓
Sensors	Check cables for cuts, tears			✓
	Check for damaged insulation			✓
Accelerometer	Head mounting secure			✓
Mounting	Chest mounting secure			✓
Knees	Skin condition			✓
	Insert (do not remove)			✓
	Casting			✓
Limbs	Normal movement and adjustment			✓
Knee Sliders	Wires intact			✓
	Rubber returned to "resting" position			✓
Pelvis	Broken			✓
Other	Describe below as needed			✓

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:



J. Hernandez

Approved By:



P. Puzzuto

ATD Serial No.: 141

Test Date: 2020-09-09

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.0	Pass
Laboratory Relative Humidity	%	10	70	20	Pass
A - Total sitting height	mm	775	800	784	Pass
B - Shoulder pivot height	mm	432	457	444	Pass
C - 'H' point height	mm	81	86	86	Pass
D - 'H' point location from backline	mm	145	150	149	Pass
E - Shoulder pivot from backline	mm	69	84	81	Pass
F - Thigh clearance	mm	119	135	125	Pass
G - Back of elbow to wrist pivot	mm	244	259	253	Pass
H - Head back to backline	mm	41	46	42	Pass
I - Shoulder to elbow length	mm	277	297	287	Pass
J - Elbow rest height	mm	183	203	196	Pass
K - Buttock to knee length	mm	521	546	538	Pass
L - Popliteal length	mm	356	376	362	Pass
M - Knee pivot height	mm	394	419	410	Pass
N - Buttock popliteal length	mm	414	439	428	Pass
O - Chest depth without jacket	mm	175	191	183	Pass
P - Foot length	mm	219	234	231	Pass
R - Buttock to Knee Pivot Length	mm	457	483	478	Pass
S - Head Breadth	mm	137	147	143	Pass
T - Head Depth	mm	178	188	183	Pass
U - Hip Breadth	mm	300	315	311	Pass
V - Shoulder breadth	mm	351	366	363	Pass
W - Foot breadth	mm	79	94	87	Pass
X - Head circum.	mm	528	549	533	Pass
Y - Chest circum. (w/chest jacket)	mm	851	881	870	Pass
Z - Waist circum.	mm	760	790	768	Pass
AA - Location for chest circum.	mm	333	358	340	Pass
BB - Location for waist circum.	mm	160	170	166	Pass
			Overall Test Results		Pass

Technician:



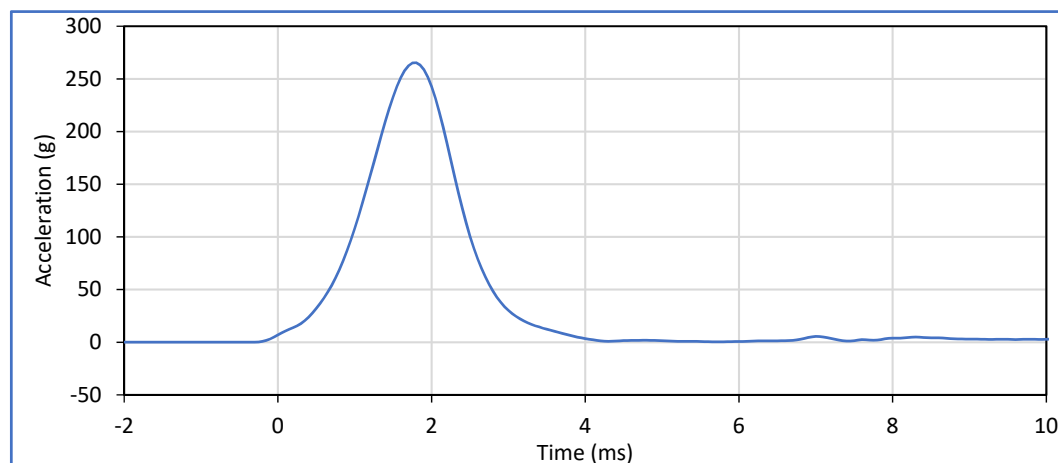
J. Hernandez

Approved By:



P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.0	Pass
Laboratory Humidity	%	10	70	20	Pass
Peak Resultant Acceleration	g	250.0	300.0	265.4	Pass
Peak Lateral Acceleration	g	-15.0	15.0	-5.6	Pass
Oscillations After Main Pulse	%	0.0	10.0	2.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results		Pass

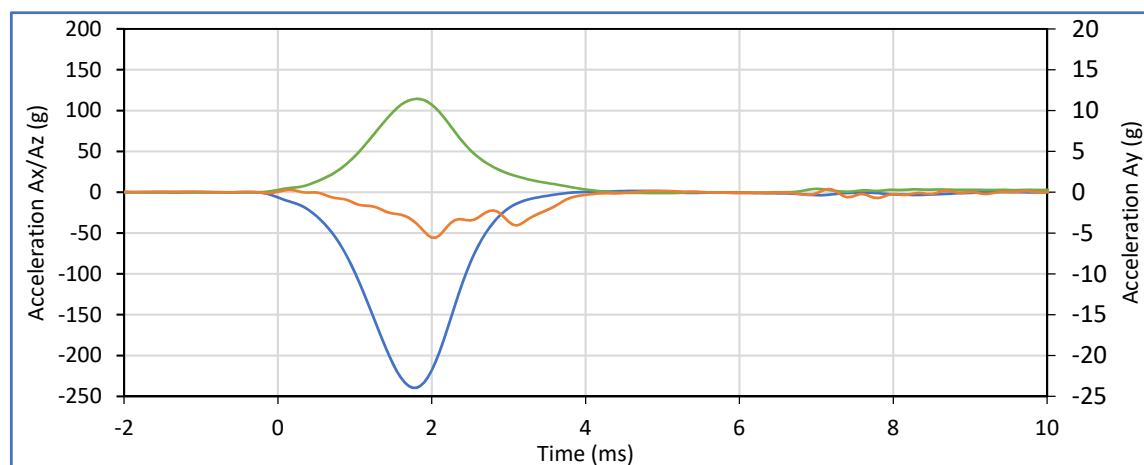


Head Resultant

Max:265.4@1.8

Min:0.4@5.8

SAE Class 1000



Head Ax

Max:1.6@4.7

Min:-239.4@1.8

SAE Class 1000

Head Ay

Max:0.4@7.2

Min:-5.6@2.1

SAE Class 1000

Head Az

Max:114.4@1.8

Min:-1.0@5.0

SAE Class 1000

Technician:

J. Hernandez

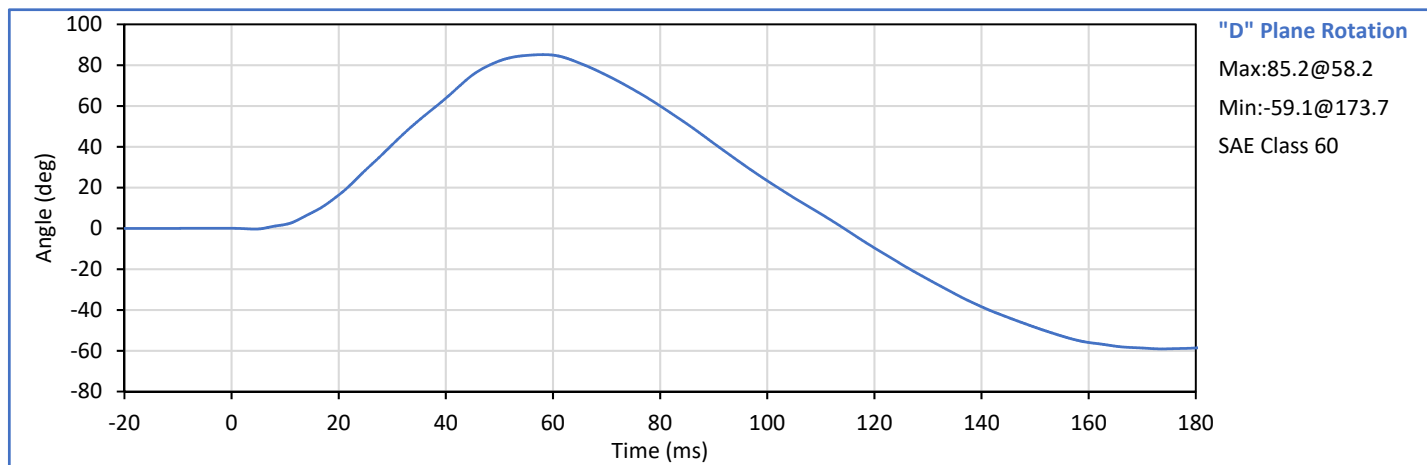
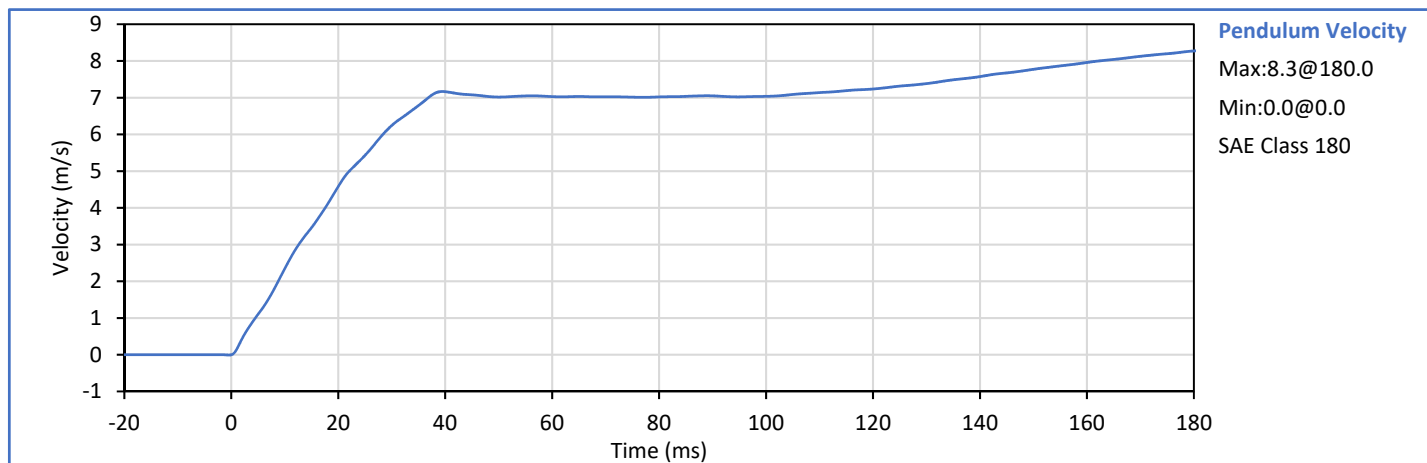
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	22	Pass
Pendulum Velocity	m/s	6.89	7.13	6.90	Pass
Pendulum Velocity at 10 ms	m/s	2.10	2.50	2.34	Pass
Pendulum Velocity at 20 ms	m/s	4.00	5.00	4.58	Pass
Pendulum Velocity at 30 ms	m/s	5.80	7.00	6.24	Pass
Peak "D" Plane Rotation	deg	77.0	91.0	85.2	Pass
Peak Moment in Rotation	Nm	69.0	83.0	75.4	Pass
Positive Moment Decay to 10 Nm	ms	80.0	100.0	82.9	Pass
Overall Test Results				Pass	Pass



Technician:

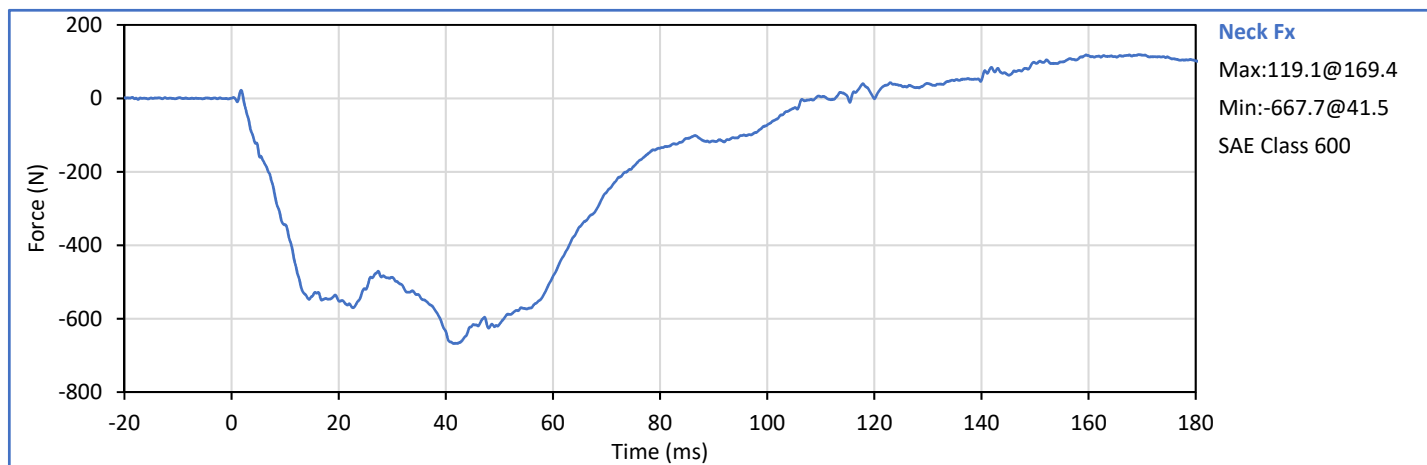
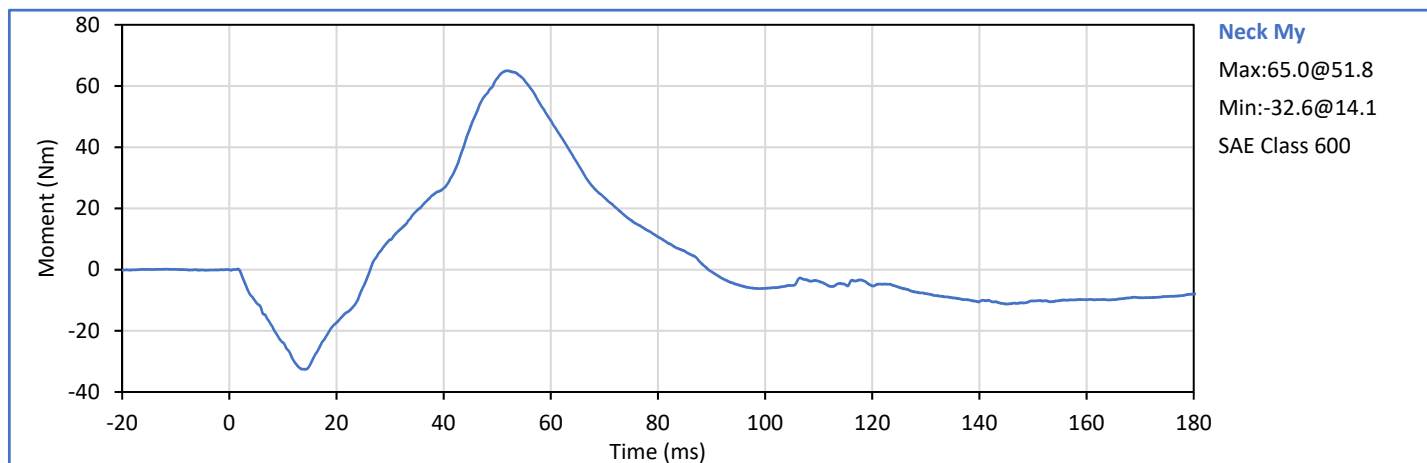
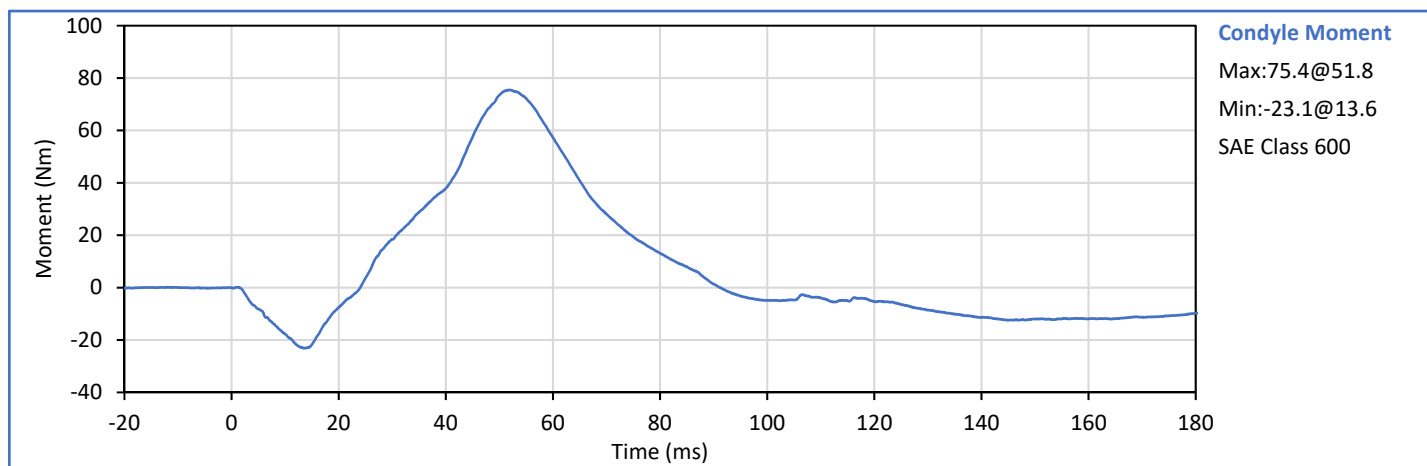
J. Hernandez

J. Hernandez

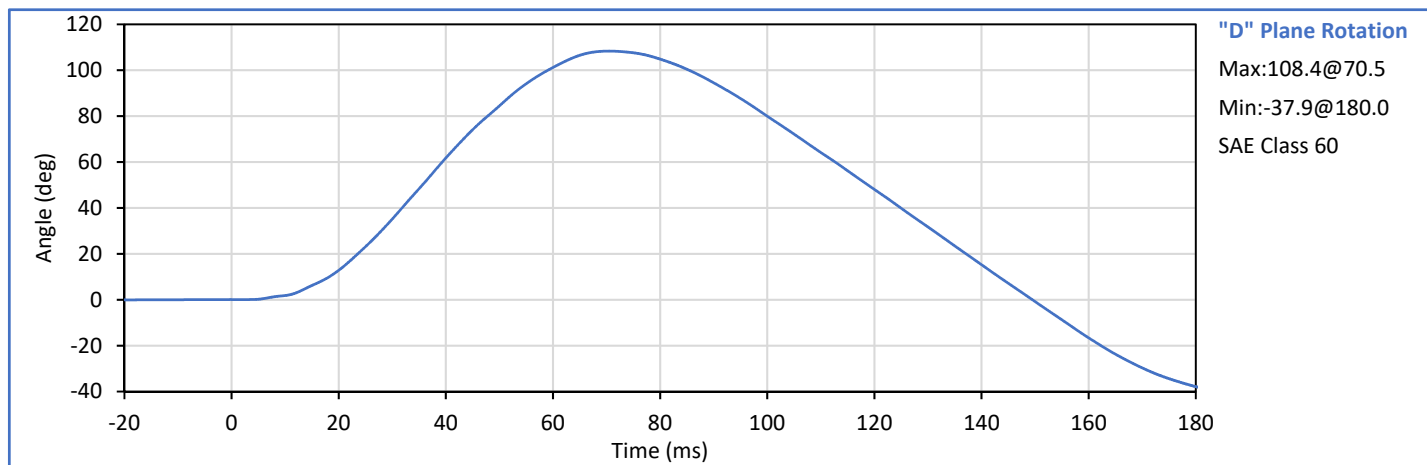
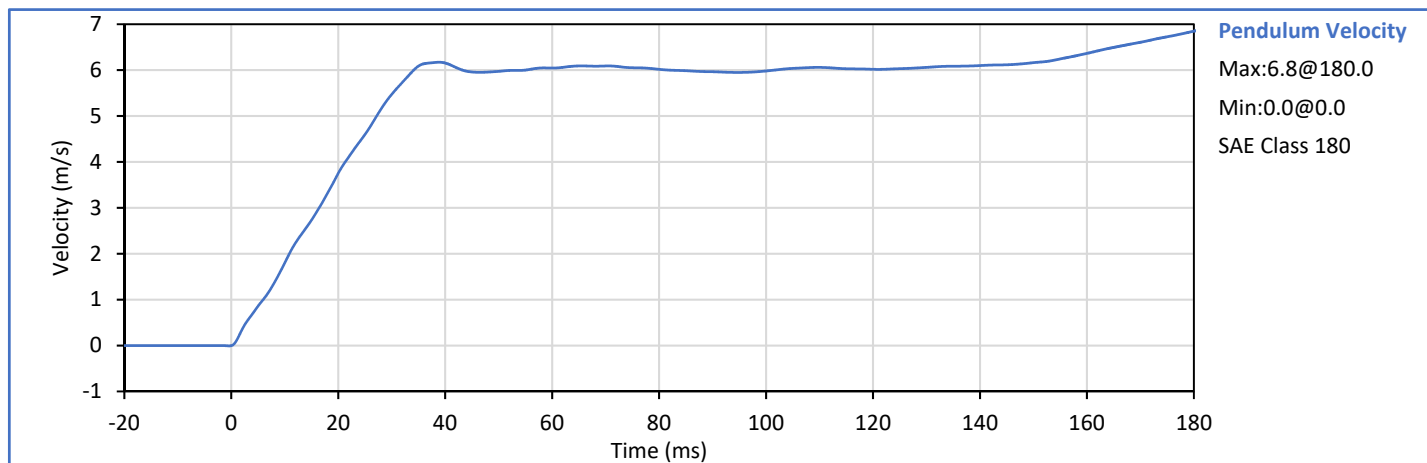
Approved By:

P. Puzzuto

P. Puzzuto



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	22	Pass
Pendulum Velocity	m/s	5.95	6.19	6.01	Pass
Pendulum Velocity at 10 ms	m/s	1.50	1.90	1.80	Pass
Pendulum Velocity at 20 ms	m/s	3.10	3.90	3.75	Pass
Pendulum Velocity at 30 ms	m/s	4.60	5.60	5.47	Pass
Peak "D" Plane Rotation	deg	99.0	114.0	108.4	Pass
Peak Moment in Rotation	Nm	-65.0	-53.0	-64.5	Pass
Negative Moment Decay to -10 Nm	ms	94.0	114.0	97.4	Pass
Overall Test Results				Pass	Pass

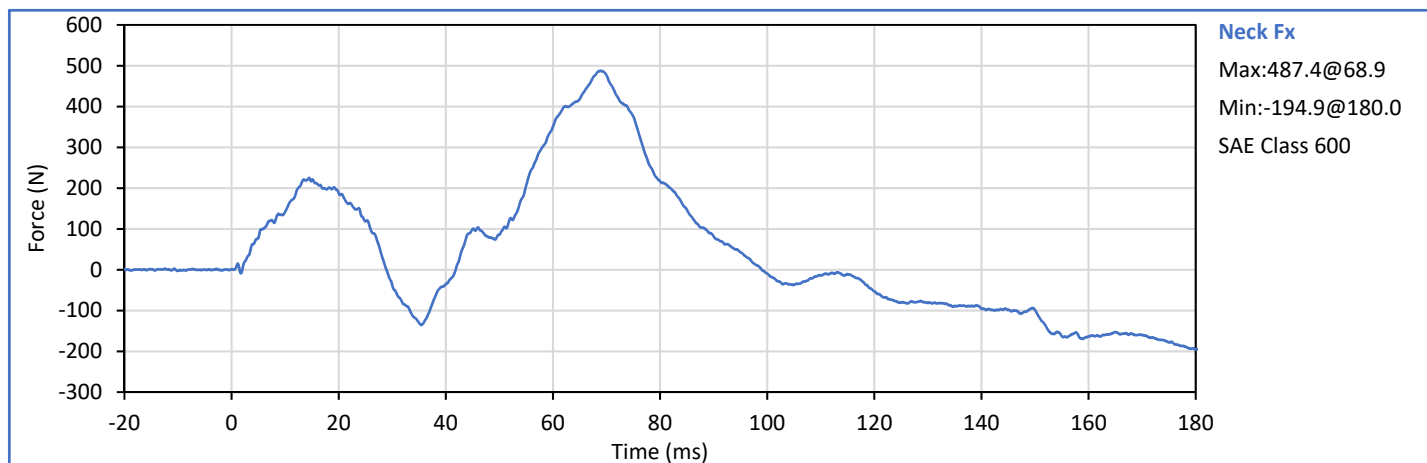
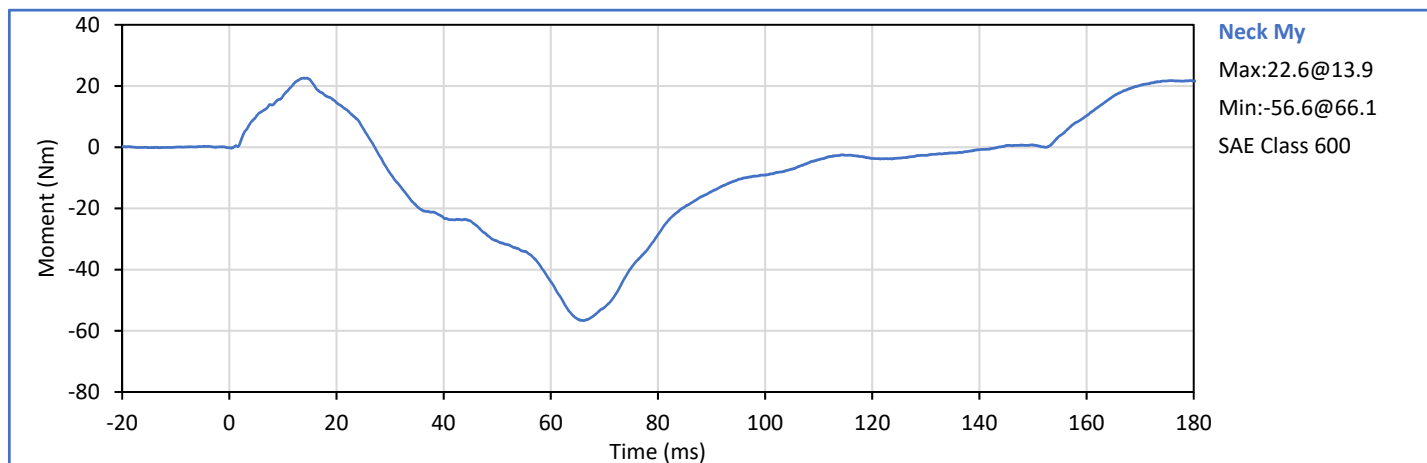
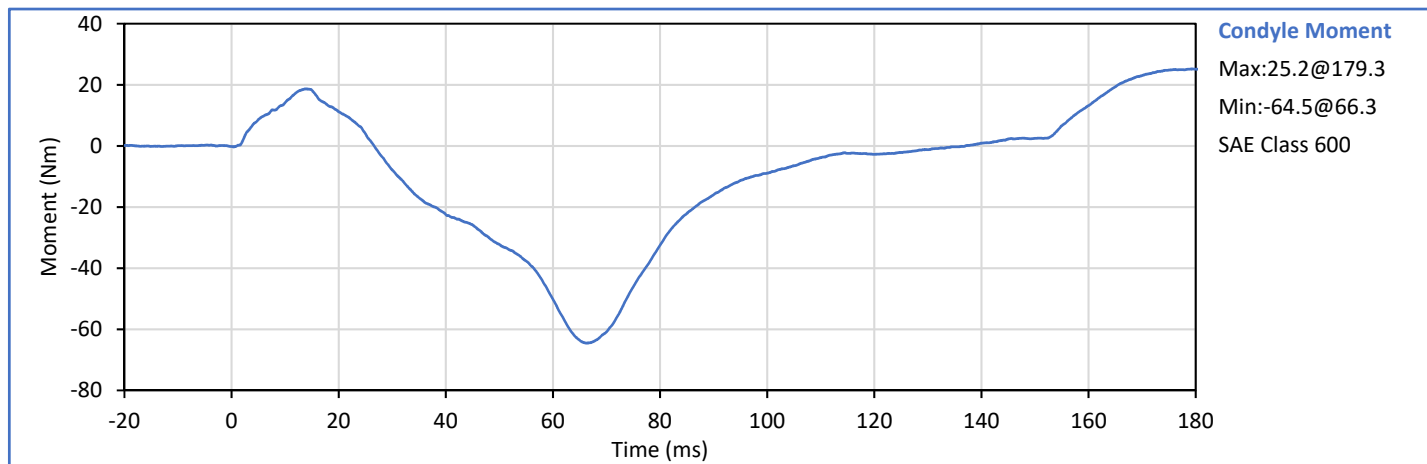


Technician: _____

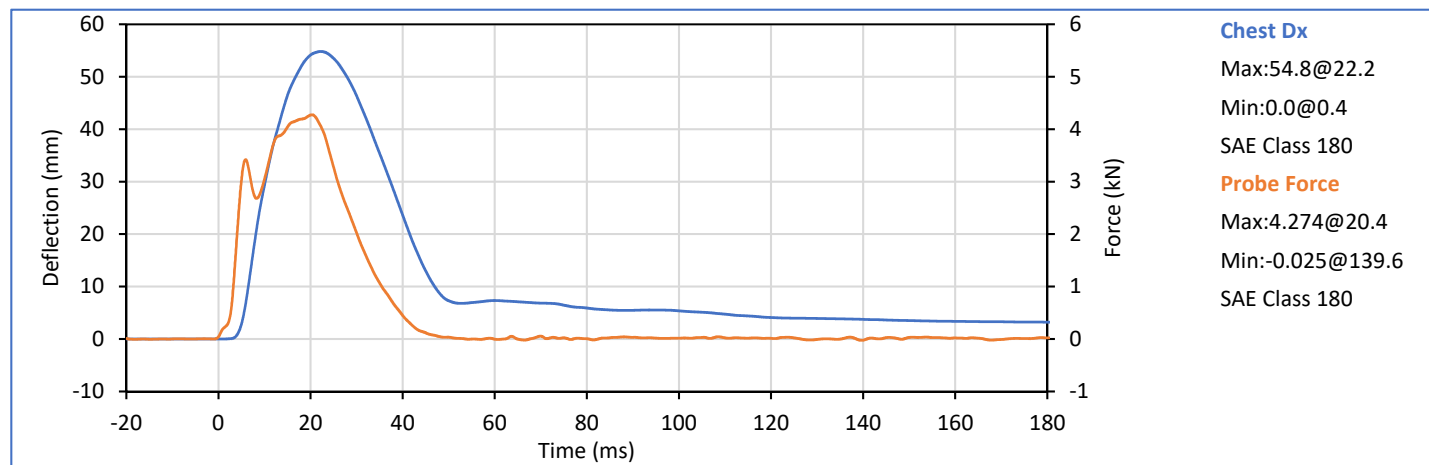
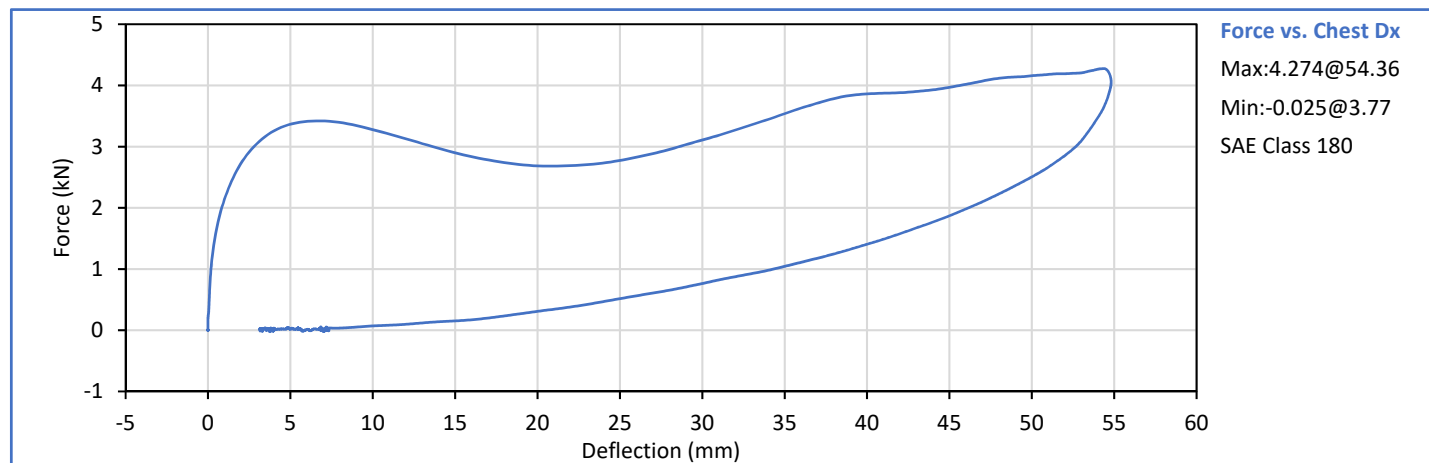
J. Hernandez

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	28	Pass
Probe Velocity	m/s	6.59	6.83	6.73	Pass
Peak Chest Deflection	mm	50.0	58.0	54.8	Pass
Peak Probe Force, 50 and 58 mm	kN	3.900	4.400	4.274	Pass
Peak Probe Force, 18 and 50 mm	kN	0.000	4.600	4.159	Pass
Internal Hysteresis	%	69.0	85.0	72.0	Pass
Overall Test Results				Pass	Pass



Technician:

J. Hernandez

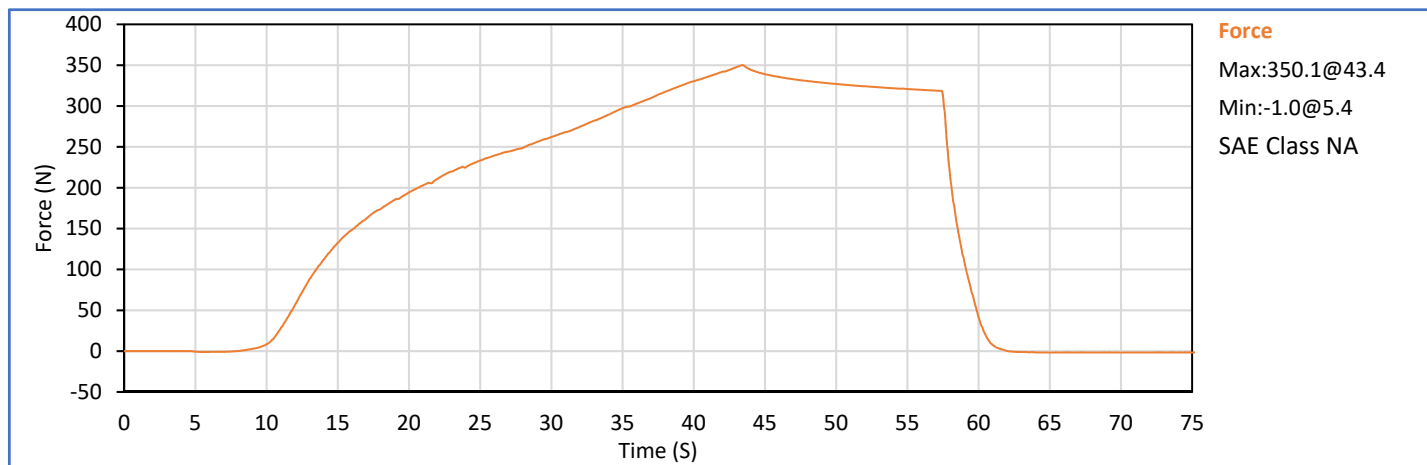
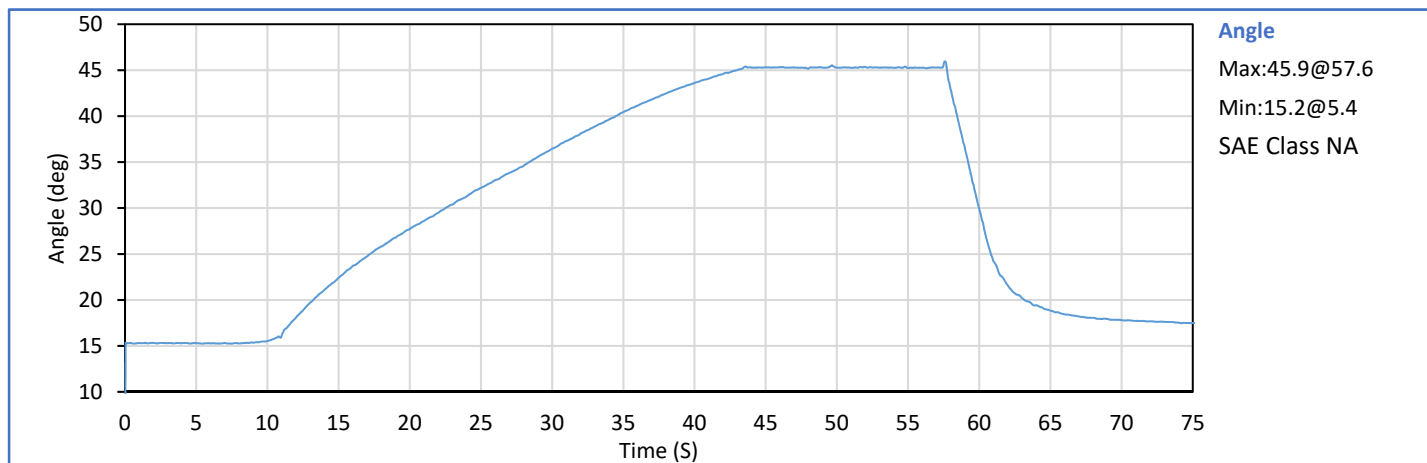
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

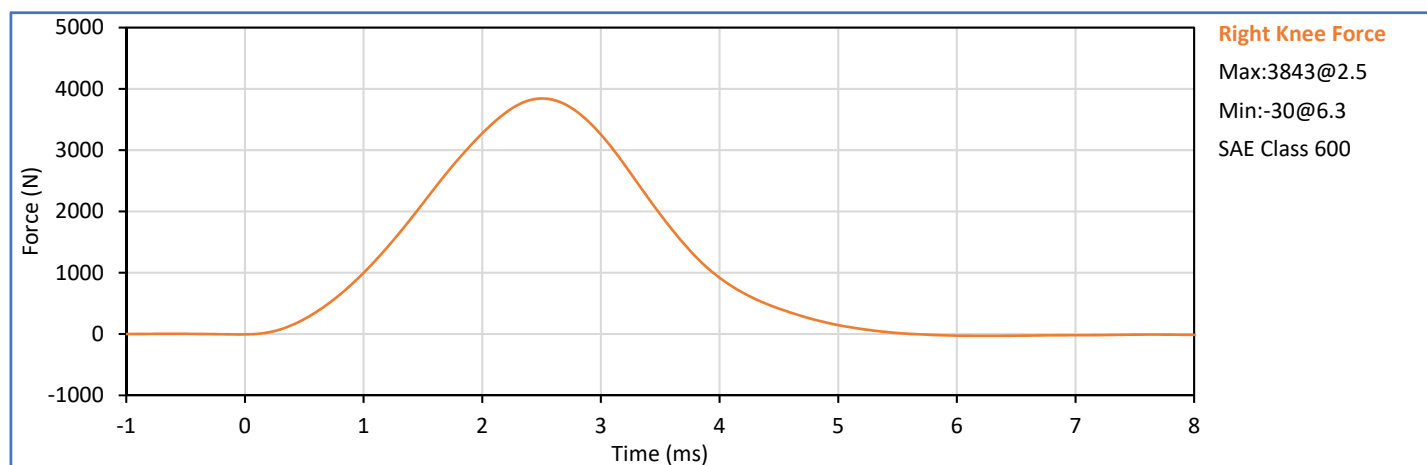
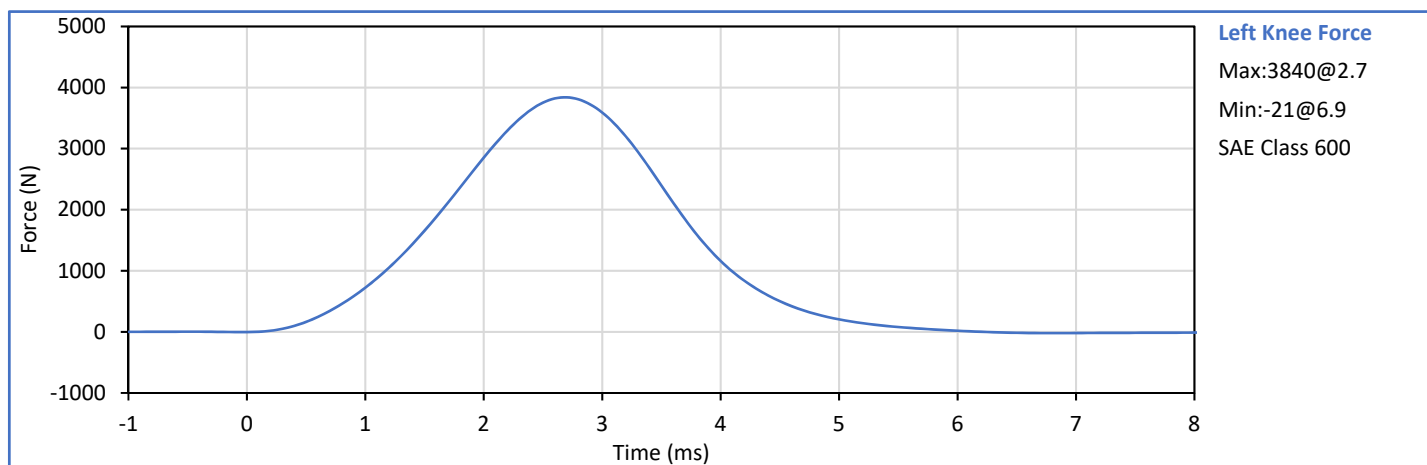
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.6	Pass
Laboratory Humidity	%	10	70	34	Pass
Orientation Angle	deg	0.0	20.0	15.1	Pass
Test Initial Angle	deg	11.0	19.0	15.3	Pass
Peak Force at 45° (+/-0.5°)	N	320.0	390.0	348.4	Pass
Torso Flexion Rate	deg/s	0.50	1.50	0.90	Pass
Final Reference Plane Angle	deg	-8.0	8.0	4.6	Pass
Overall Test Results				Pass	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	21.4	Pass
	Laboratory Humidity	%	10	70	21	Pass
Left	Probe Velocity	m/s	2.070	2.130	2.109	Pass
Knee	Peak Resistive Force	N	3450	4060	3840	Pass
Right	Probe Velocity	m/s	2.070	2.130	2.107	Pass
Knee	Peak Resistive Force	N	3450	4060	3843	Pass
Overall Test Results					Pass	



Technician: J. Hernandez

Approved By: P. Puzzuto

APPENDIX C
Post-Test ATD Qualification and Performance Verification
Hybrid III 50th Percentile Male ATD
S/N: 360

ATD Serial No.: 360

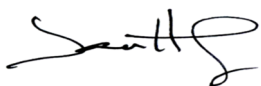
Test Date: 2020-10-02

Dummy Item	Inspect for	Comments	Damage	OK
Entire ATD	Perform general cleaning			✓
Outer Skin	Gashes, rips, cracks			✓
Head	Ballast secure			✓
	General appearance			✓
Neck bracket	Upper neck firmly attached to lower bracket			✓
Neck	Broken or cracked rubber			✓
	Looseness at the condyle joint			✓
Nodding block	Cracked or out of position			✓
Lumbar Spine	Broken or cracked rubber			✓
Ribs	Broken or bent ribs			✓
	Broken or bent rib supports			✓
	Damping material separated or cracked			✓
	Rubber bumpers in place			✓
Chest Displ. Assembly	Bent shaft			✓
	Slider arm riding in track			✓
Sensors	Check cables for cuts, tears			✓
	Check for damaged insulation			✓
Accelerometer Mounting	Head mounting secure			✓
	Chest mounting secure			✓
Knees	Skin condition			✓
	Insert (do not remove)			✓
	Casting			✓
Limbs	Normal movement and adjustment			✓
Knee Sliders	Wires intact			✓
	Rubber returned to "resting" position			✓
Pelvis	Broken			✓
Other	Describe below as needed			✓

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:



J. Hernandez

Approved By:



P. Puzzuto

ATD Serial No.: 360

Test Date: 2020-10-02

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	26	Pass
A - Total sitting height	mm	879	889	886	Pass
B - Shoulder pivot height	mm	505	521	519	Pass
C - 'H' point height	mm	84	89	88	Pass
D - 'H' point location from backline	mm	135	140	139	Pass
E - Shoulder pivot from backline	mm	84	94	91	Pass
F - Thigh clearance	mm	140	155	151	Pass
G - Back of elbow to wrist pivot	mm	290	305	297	Pass
H - Head back to backline	mm	41	46	44	Pass
I - Shoulder to elbow length	mm	330	345	338	Pass
J - Elbow rest height	mm	190	211	206	Pass
K - Buttock to knee length	mm	579	604	595	Pass
L - Popliteal length	mm	429	455	437	Pass
M - Knee pivot height	mm	485	500	496	Pass
N - Buttock popliteal length	mm	452	477	464	Pass
O - Chest depth without jacket	mm	213	229	222	Pass
P - Foot length	mm	251	267	259	Pass
V - Shoulder breadth	mm	422	437	427	Pass
W - Foot breadth	mm	91	107	103	Pass
Y - Chest circum. (w/chest jacket)	mm	970	1001	980	Pass
Z - Waist circum.	mm	836	866	846	Pass
AA - Location for chest circum.	mm	429	434	432	Pass
BB - Location for waist circum.	mm	226	231	228	Pass
Overall Test Results				Pass	

Technician:



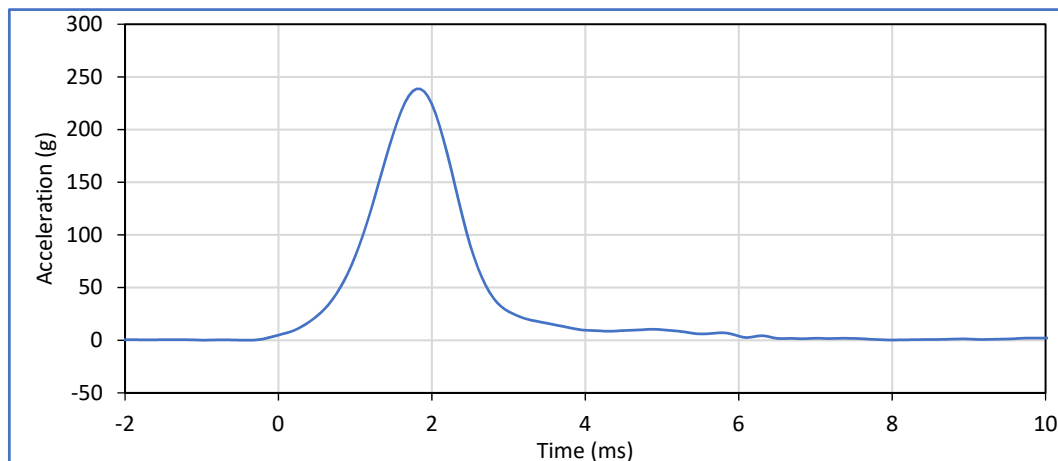
J. Hernandez

Approved By:



P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.1	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
Peak Resultant Acceleration	g	225.0	275.0	238.7	Pass
Peak Lateral Acceleration	g	-15.0	15.0	-0.9	Pass
Oscillations After Main Pulse	%	0.0	10.0	3.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results		Pass

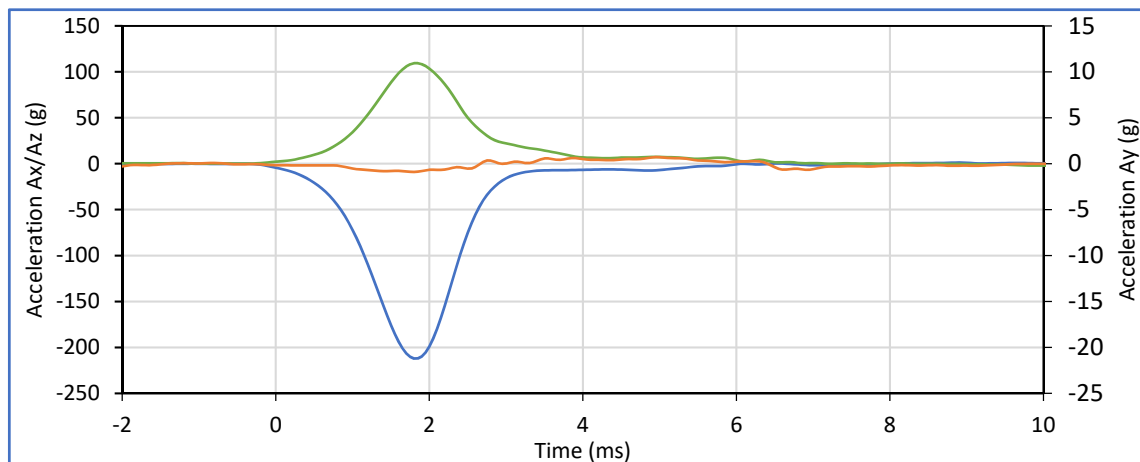


Head Resultant

Max:238.7@1.8

Min:0.2@8.0

SAE Class 1000



Head Ax

Max:1.3@8.9

Min:-212.1@1.8

SAE Class 1000

Head Ay

Max:0.7@5.0

Min:-0.9@1.8

SAE Class 1000

Head Az

Max:109.5@1.9

Min:-2.0@10.0

SAE Class 1000

Technician:

J. Hernandez

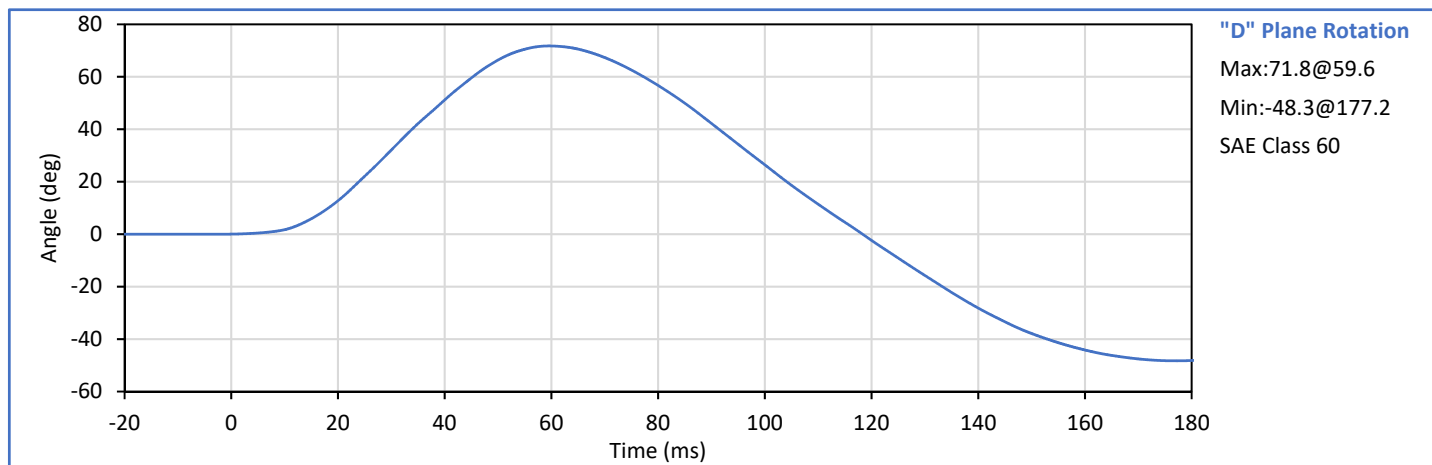
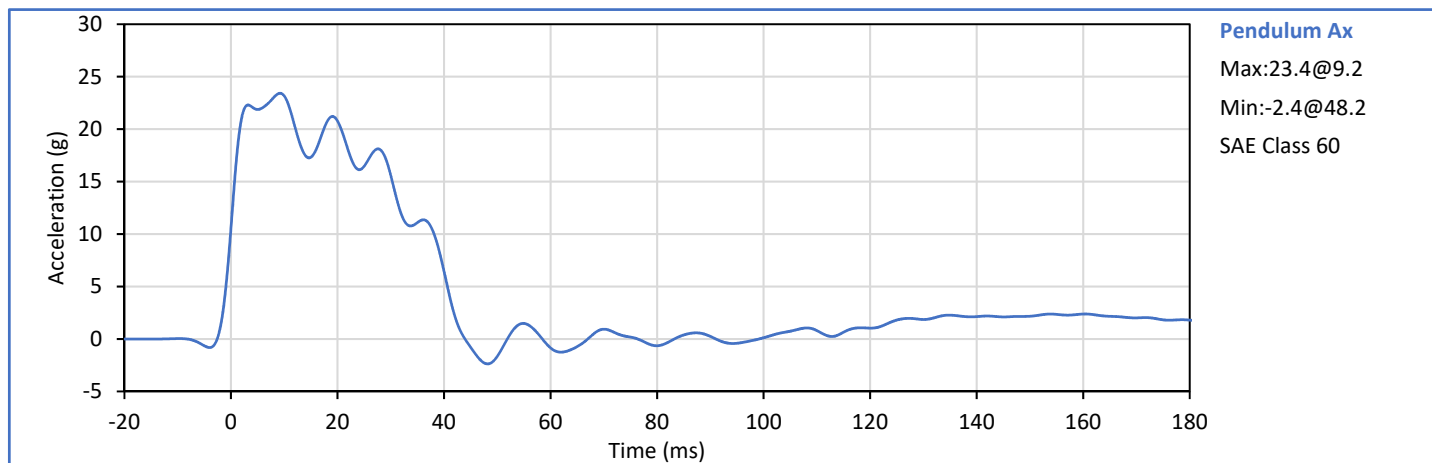
J. Hernandez

Approved By:

P. Puzzuto

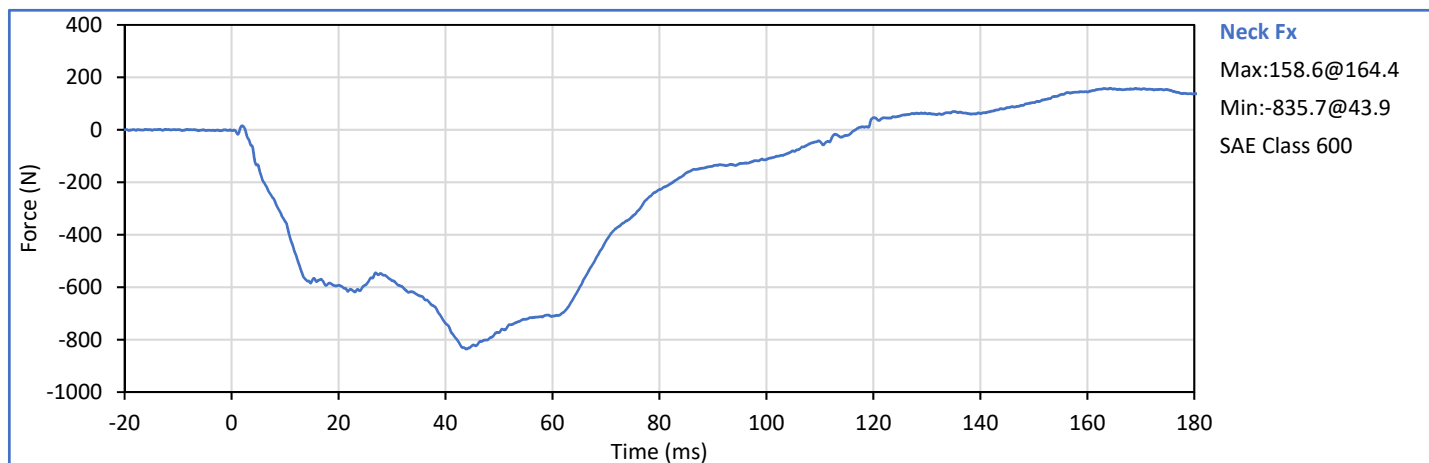
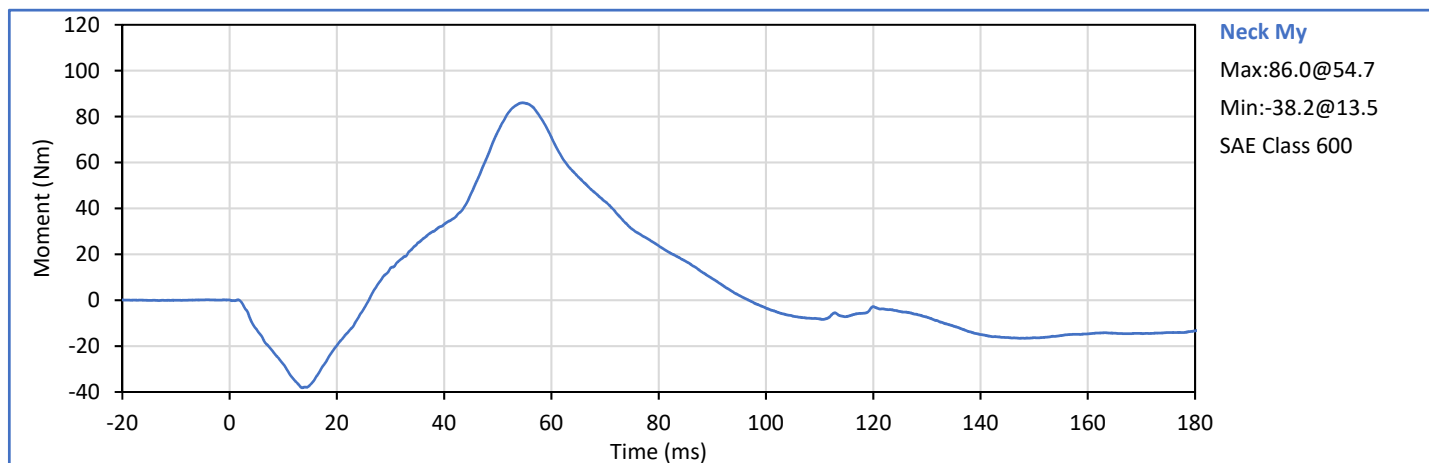
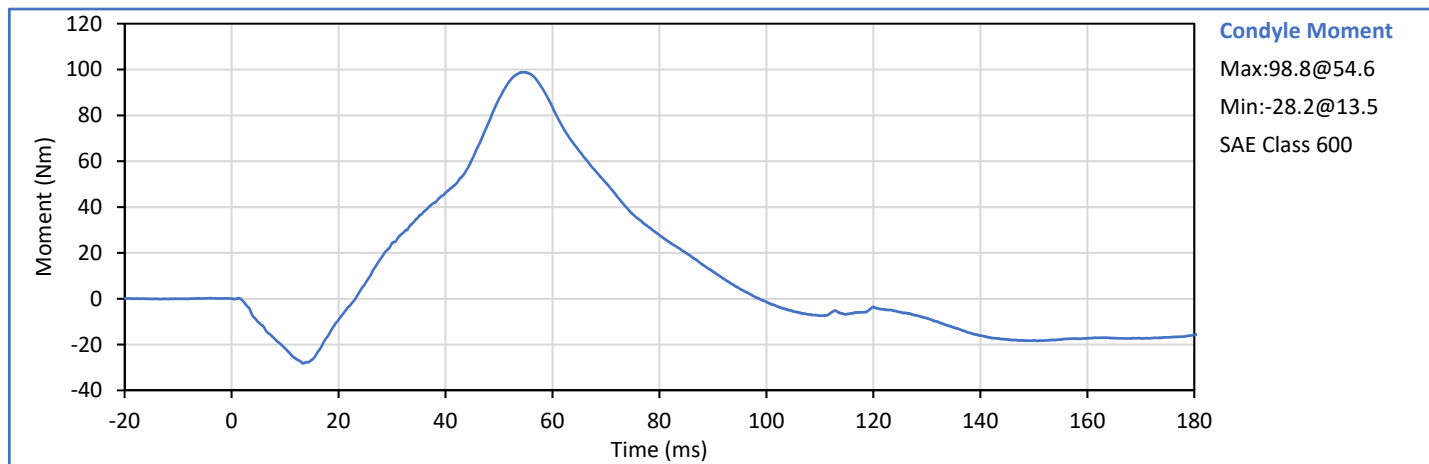
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	6.89	7.13	6.92	Pass
Pendulum Deceleration at 10 ms	g	22.5	27.5	23.2	Pass
Pendulum Deceleration at 20 ms	g	17.6	22.6	20.8	Pass
Pendulum Deceleration at 30 ms	g	12.5	18.5	15.6	Pass
Peak Pendulum Decel. after 30 ms	g	0.0	29.0	15.6	Pass
Deceleration Decay to Cross 5 g	ms	34.0	42.0	40.6	Pass
"D" Plane Rotation peak	deg	64.0	78.0	71.8	Pass
	ms	57.0	64.0	59.6	Pass
"D" Plane Rotation Decay To Zero	ms	113.0	128.0	118.4	Pass
Moment About Occipital Condyle	Nm	88.1	108.5	98.8	Pass
	ms	47.0	58.0	54.6	Pass
Moment Decay, Peak to Zero	ms	97.0	107.0	98.7	Pass
Overall Test Results					Pass

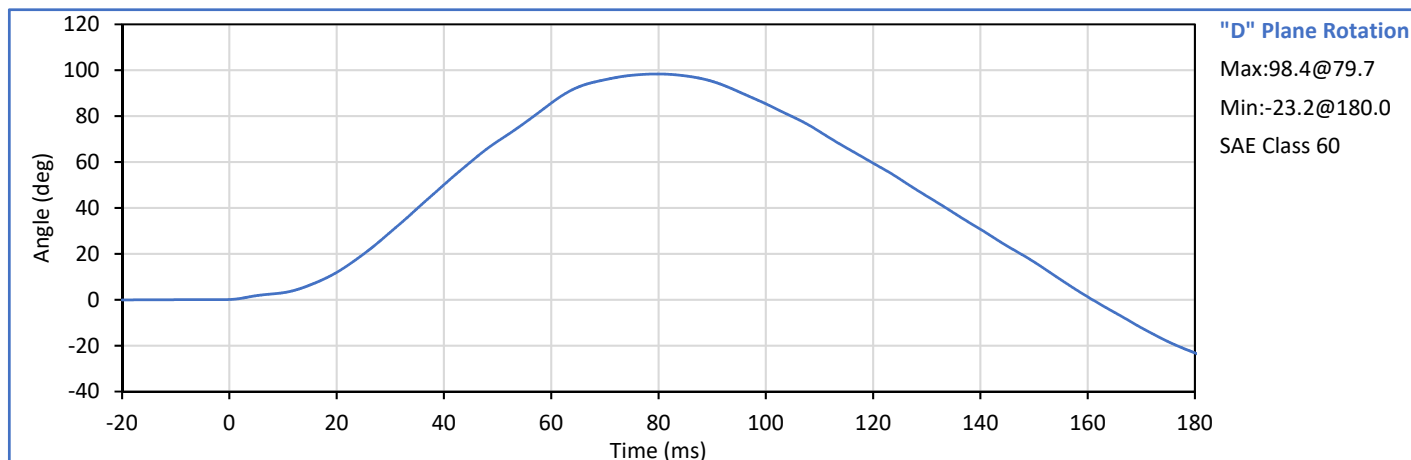
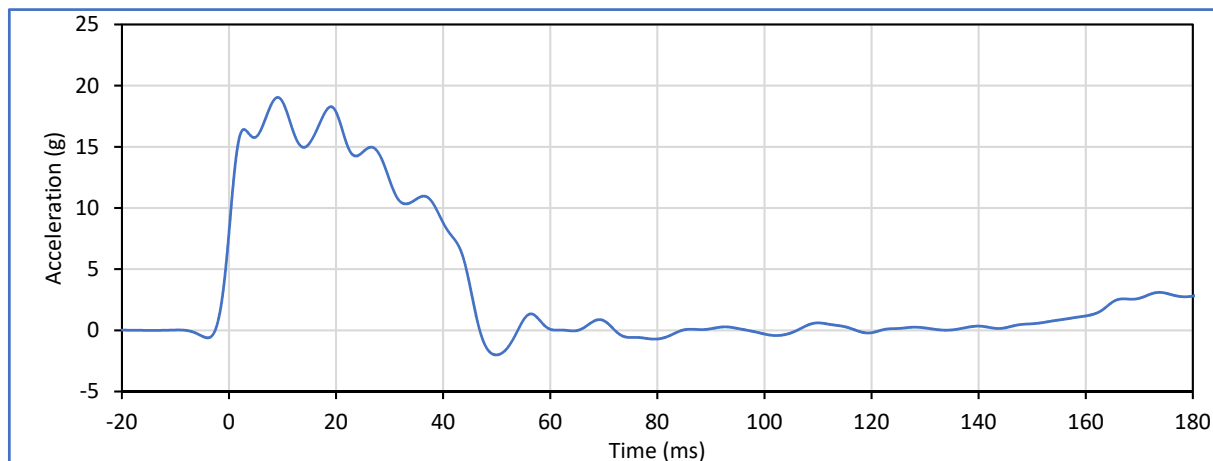


Technician: J. Hernandez

Approved By: P. Puzzuto



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	5.94	6.19	6.09	Pass
Pendulum Deceleration at 10 ms	g	17.2	21.2	18.7	Pass
Pendulum Deceleration at 20 ms	g	14.0	19.0	17.8	Pass
Pendulum Deceleration at 30 ms	g	11.0	16.0	12.3	Pass
Peak Pendulum Decel. after 30 ms	g	0.0	22.0	12.3	Pass
Deceleration Decay to Cross 5 g	ms	38.0	46.0	44.3	Pass
"D" Plane Rotation peak	deg	81.0	106.0	98.4	Pass
	ms	72.0	82.0	79.7	Pass
"D" Plane Rotation Decay To Zero	ms	147.0	174.0	161.0	Pass
Moment About Occipital Condyle	Nm	-79.9	-52.9	-69.5	Pass
	ms	65.0	79.0	71.9	Pass
Moment Decay, Peak to Zero	ms	120.0	148.0	144.4	Pass
Overall Test Results					Pass



Technician:

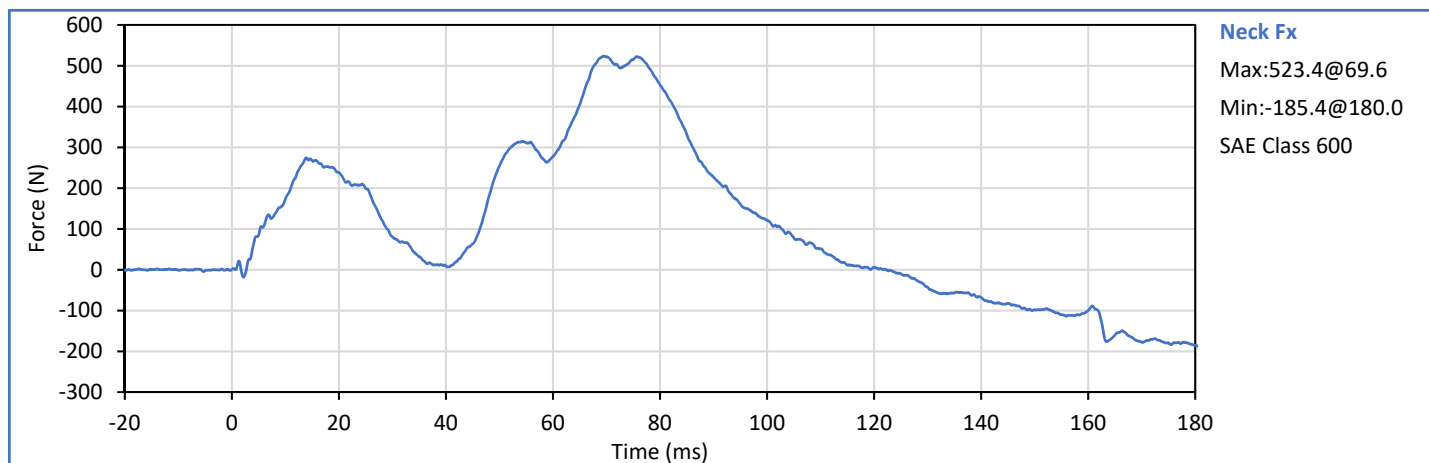
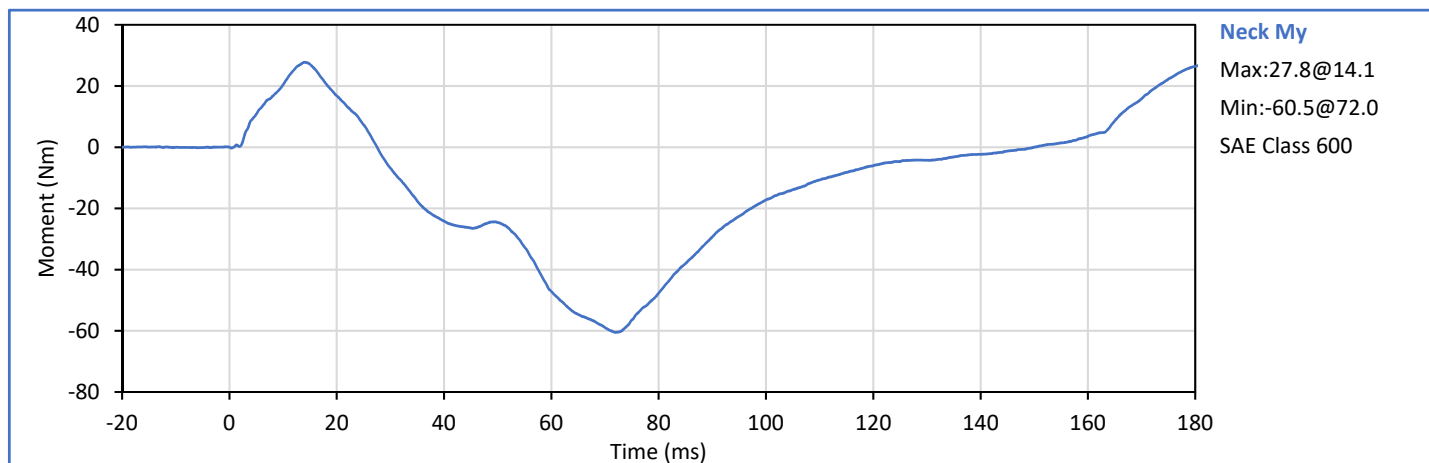
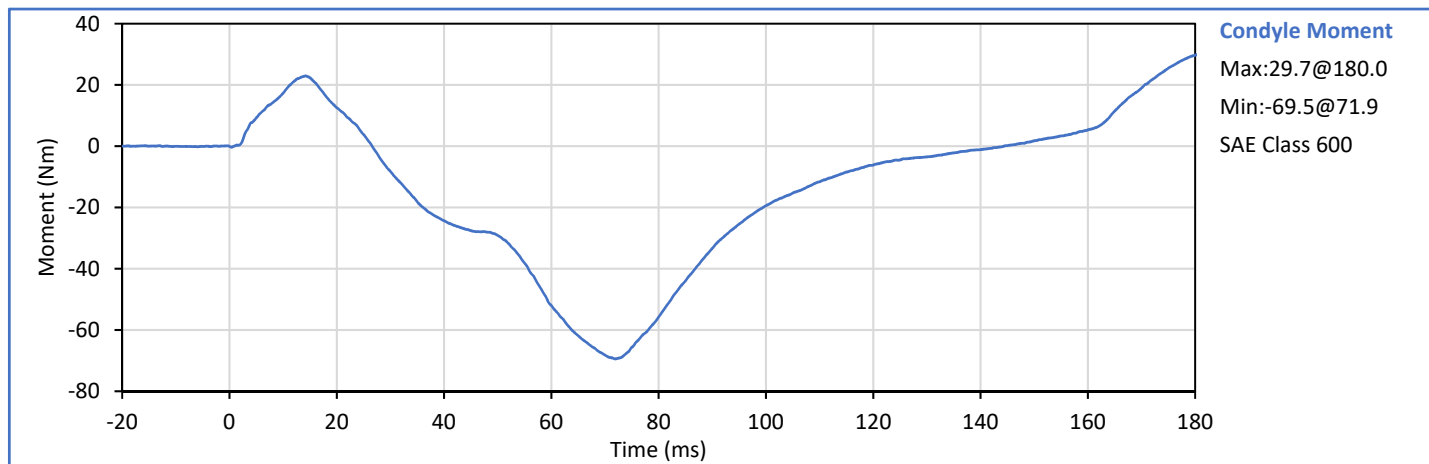
J. Hernandez

J. Hernandez

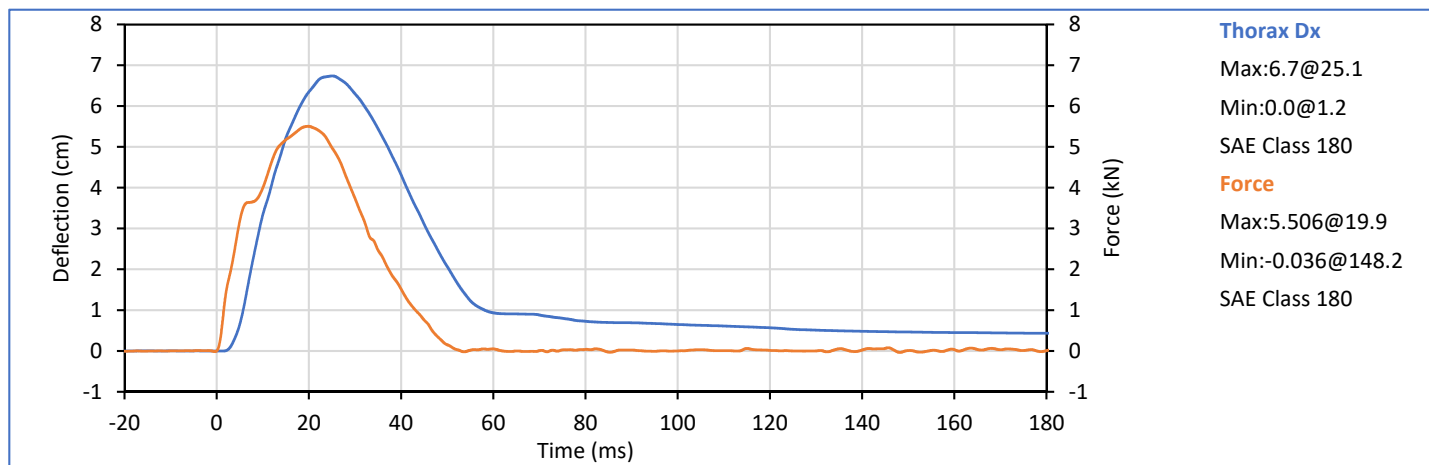
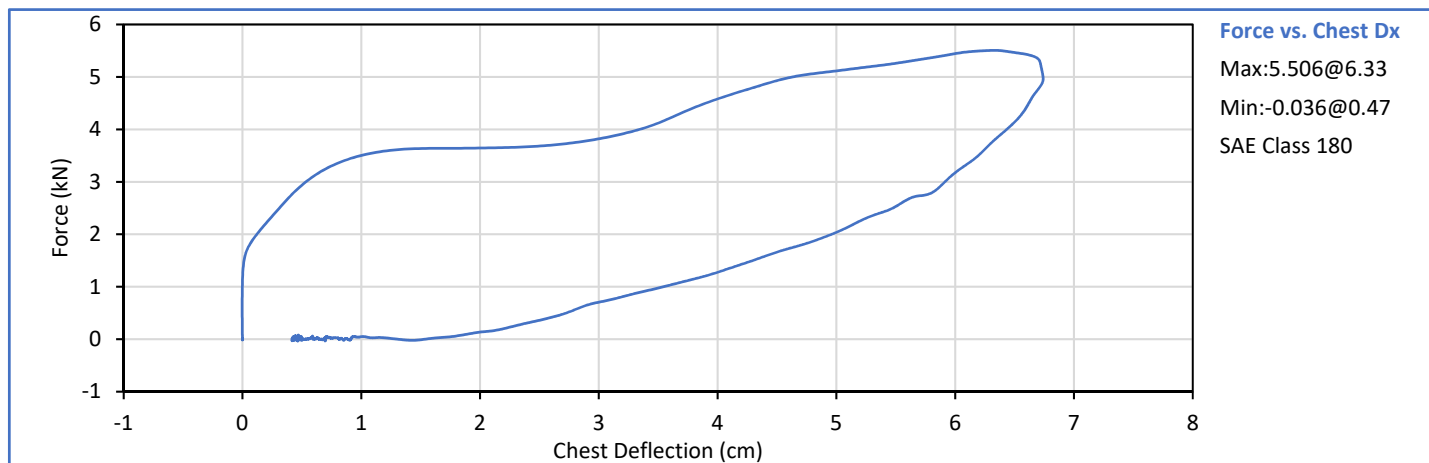
Approved By:

P. Puzzuto

P. Puzzuto



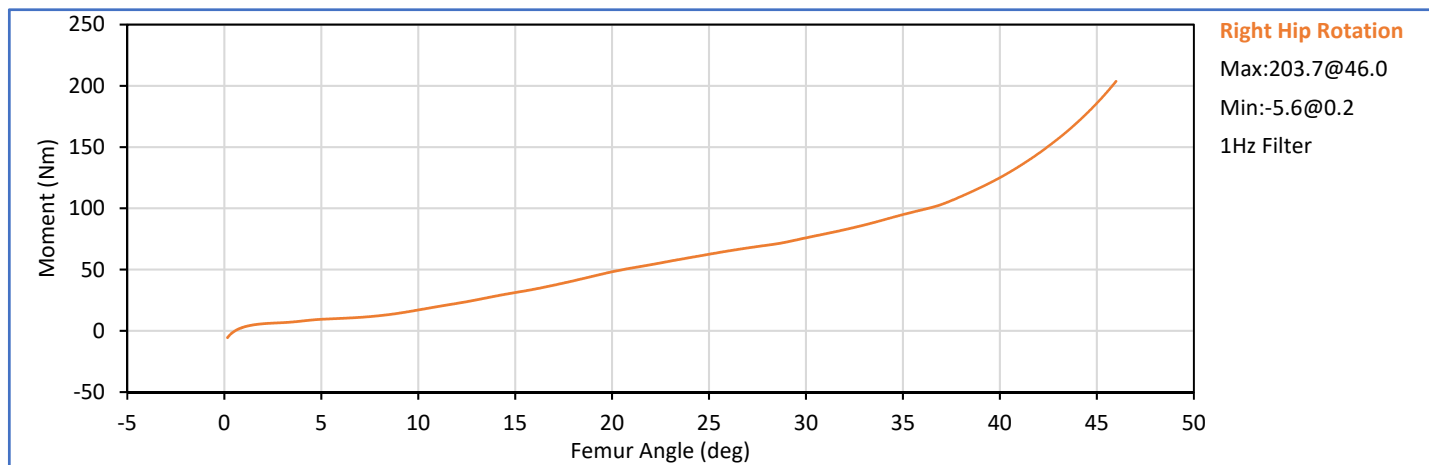
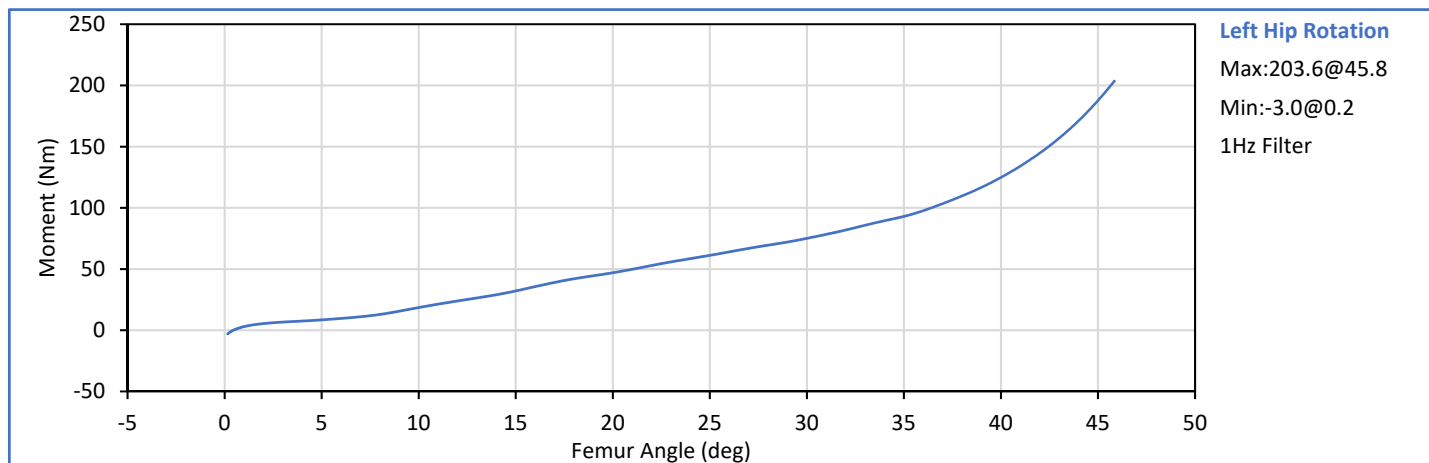
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.0	Pass
Laboratory Relative Humidity	%	10	70	23	Pass
Probe Velocity	m/s	6.58	6.82	6.75	Pass
Peak Chest Deflection	cm	6.35	7.26	6.74	Pass
Peak Probe Force	kN	5.159	5.893	5.506	Pass
Internal Hysteresis	%	69.0	85.0	70.1	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

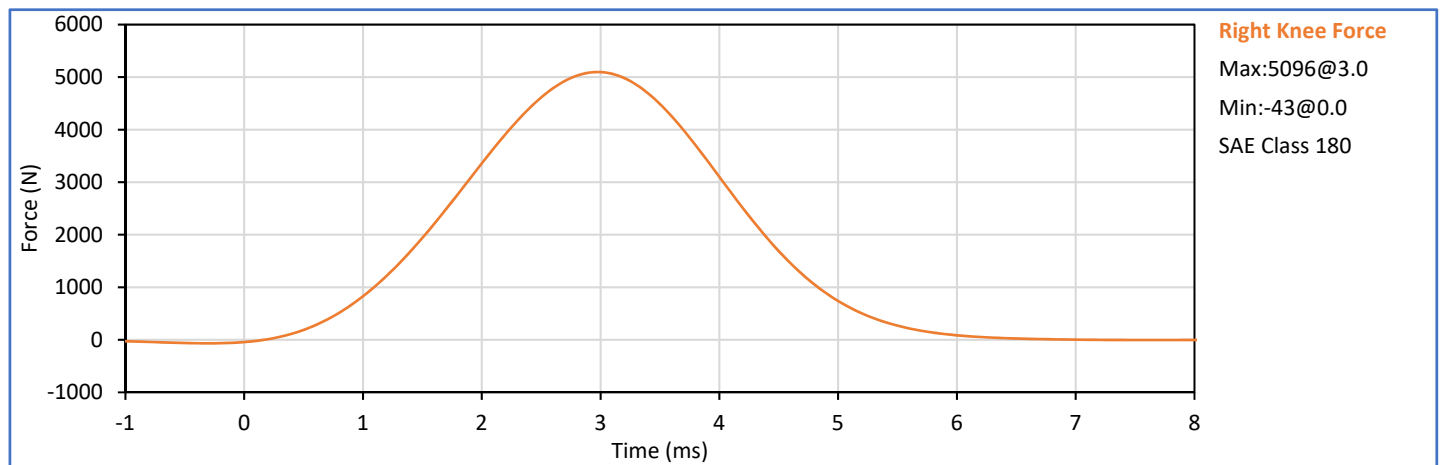
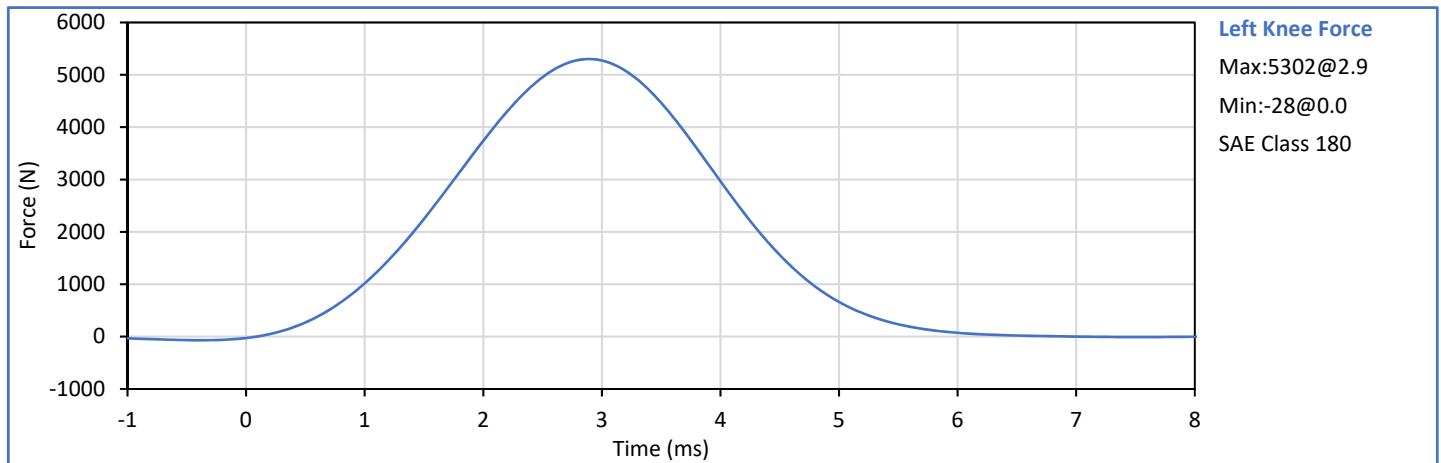
	Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
	Laboratory Temperature	°C	18.9	25.6	21.2	Pass
	Laboratory Relative Humidity	%	10	70	21	Pass
Left Hip	Left Hip Rotation Rate	deg/s	5.0	10.0	5.8	Pass
	Left Femur Torque at 30°	Nm	0.0	95.0	75.1	Pass
	Left Hip Rotation at 203 Nm	deg	40.0	50.0	45.8	Pass
Right Hip	Right Hip Rotation Rate	deg/s	5.0	10.0	5.8	Pass
	Right Femur Torque at 30°	Nm	0.0	95.0	76.0	Pass
	Right Hip Rotation at 203 Nm	deg	40.0	50.0	45.9	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	20.9	Pass
	Laboratory Relative Humidity	%	10	70	23	Pass
Left	Probe Velocity	m/s	2.070	2.130	2.105	Pass
Knee	Peak Resistive Force	N	4715	5782	5302	Pass
Right	Probe Velocity	m/s	2.070	2.130	2.106	Pass
Knee	Peak Resistive Force	N	4715	5782	5096	Pass
Overall Test Results					Pass	



Technician: J. Hernandez

Approved By: P. Puzzuto

APPENDIX C
Post-Test ATD Qualification and Performance Verification
Hybrid III 5th Percentile Female ATD
S/N: 141

Dummy Item	Inspect for	Comments	Damage	Okay
Entire ATD	Perform general cleaning			✓
Outer Skin	Gashes, rips, cracks			✓
Head	Ballast secure			✓
	General appearance			✓
Neck bracket	Upper neck firmly attached to lower bracket			✓
Neck	Broken or cracked rubber			✓
	Looseness at the condyle joint			✓
Nodding block	Cracked or out of position			✓
Lumbar Spine	Broken or cracked rubber			✓
Ribs	Broken or bent ribs			✓
	Broken or bent rib supports			✓
	Damping material separated or cracked			✓
	Rubber bumpers in place			✓
Chest Displ. Assembly	Bent shaft			✓
	Slider arm riding in track			✓
Sensors	Check cables for cuts, tears			✓
	Check for damaged insulation			✓
Accelerometer	Head mounting secure			✓
Mounting	Chest mounting secure			✓
Knees	Skin condition			✓
	Insert (do not remove)			✓
	Casting			✓
Limbs	Normal movement and adjustment			✓
Knee Sliders	Wires intact			✓
	Rubber returned to "resting" position			✓
Pelvis	Broken			✓
Other	Describe below as needed			✓

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:



J. Hernandez

Approved By:



P. Puzzuto

ATD Serial No.: 141

Test Date: 2020-10-01

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	17	Pass
A - Total sitting height	mm	775	800	791	Pass
B - Shoulder pivot height	mm	432	457	448	Pass
C - 'H' point height	mm	81	86	85	Pass
D - 'H' point location from backline	mm	145	150	148	Pass
E - Shoulder pivot from backline	mm	69	84	77	Pass
F - Thigh clearance	mm	119	135	128	Pass
G - Back of elbow to wrist pivot	mm	244	259	248	Pass
H - Head back to backline	mm	41	46	44	Pass
I - Shoulder to elbow length	mm	277	297	281	Pass
J - Elbow rest height	mm	183	203	199	Pass
K - Buttock to knee length	mm	521	546	535	Pass
L - Popliteal length	mm	356	376	368	Pass
M - Knee pivot height	mm	394	419	405	Pass
N - Buttock popliteal length	mm	414	439	433	Pass
O - Chest depth without jacket	mm	175	191	188	Pass
P - Foot length	mm	219	234	228	Pass
R - Buttock to Knee Pivot Length	mm	457	483	468	Pass
S - Head Breadth	mm	137	147	141	Pass
T - Head Depth	mm	178	188	181	Pass
U - Hip Breadth	mm	300	315	310	Pass
V - Shoulder breadth	mm	351	366	359	Pass
W - Foot breadth	mm	79	94	87	Pass
X - Head circum.	mm	528	549	539	Pass
Y - Chest circum. (w/chest jacket)	mm	851	881	868	Pass
Z - Waist circum.	mm	760	790	772	Pass
AA - Location for chest circum.	mm	333	358	341	Pass
BB - Location for waist circum.	mm	160	170	168	Pass
			Overall Test Results		Pass

Technician:



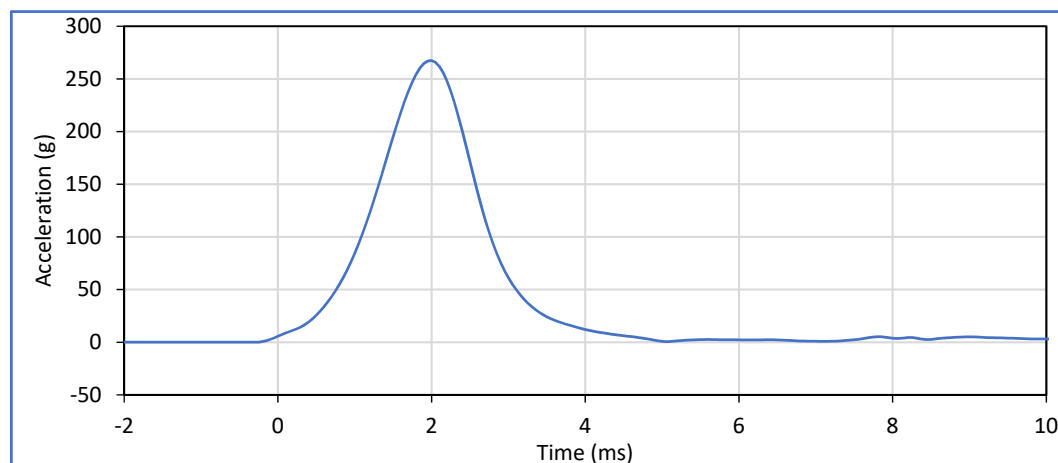
J. Hernandez

Approved By:



P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.4	Pass
Laboratory Humidity	%	10	70	17	Pass
Peak Resultant Acceleration	g	250.0	300.0	267.4	Pass
Peak Lateral Acceleration	g	-15.0	15.0	-4.8	Pass
Oscillations After Main Pulse	%	0.0	10.0	2.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	

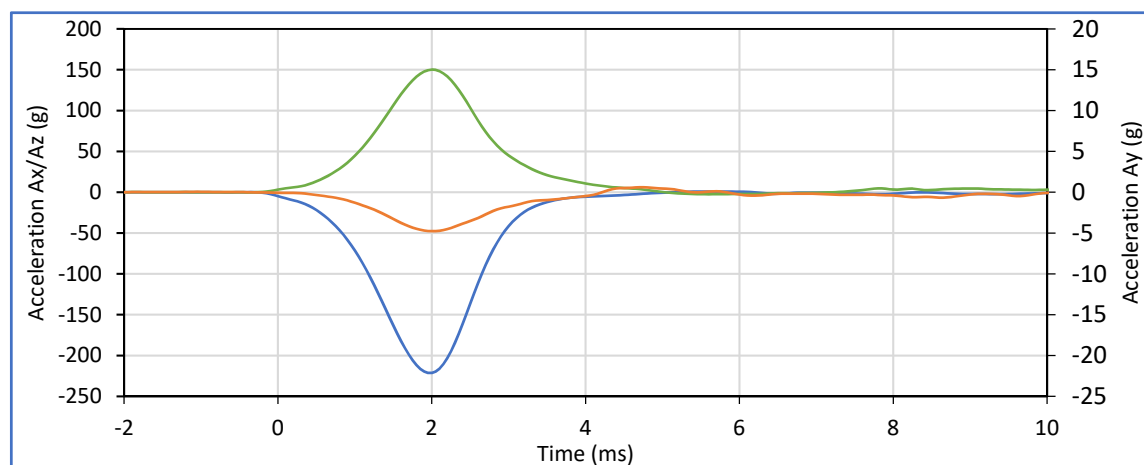


Head Resultant

Max:267.4@2.0

Min:0.6@5.1

SAE Class 1000



Head Ax

Max:0.8@5.6

Min:-221.2@2.0

SAE Class 1000

Head Ay

Max:0.6@4.7

Min:-4.8@2.0

SAE Class 1000

Head Az

Max:150.2@2.0

Min:-2.5@5.6

SAE Class 1000

Technician:

J. Hernandez

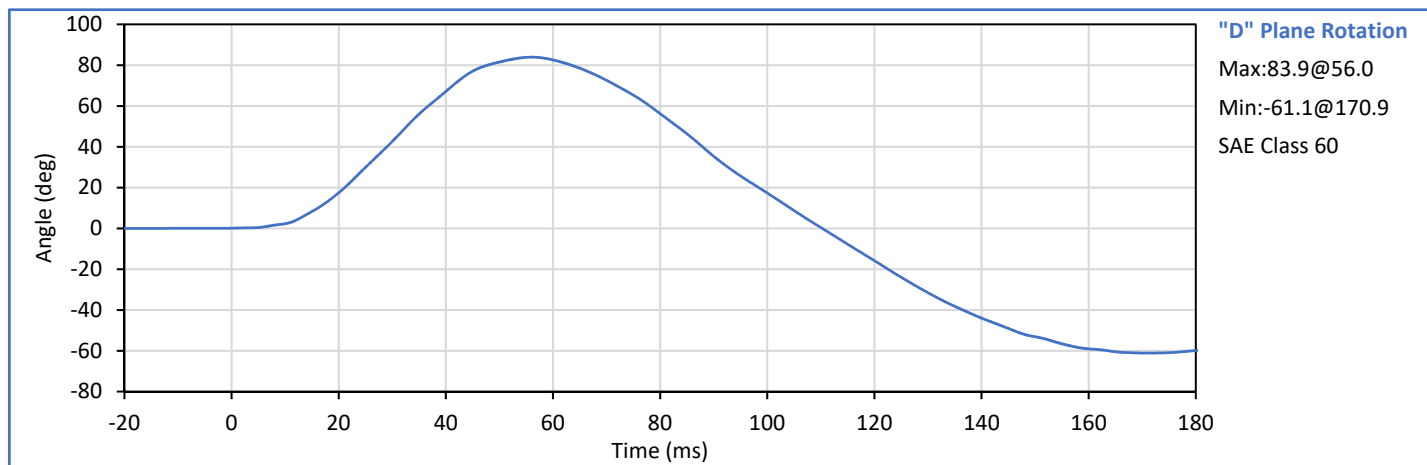
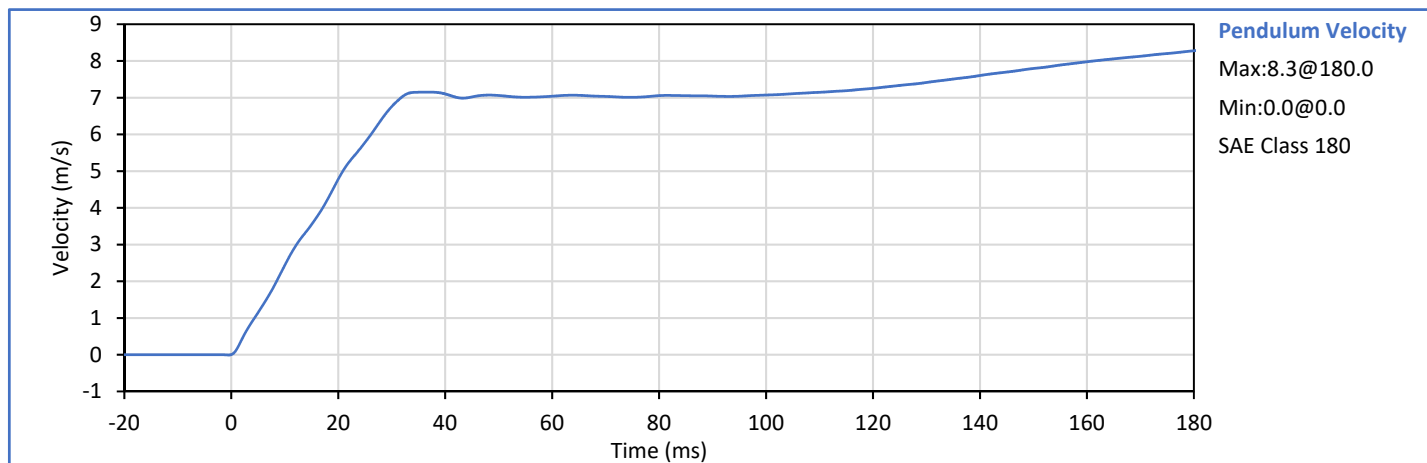
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.5	Pass
Laboratory Humidity	%	10	70	18	Pass
Pendulum Velocity	m/s	6.89	7.13	7.03	Pass
Pendulum Velocity at 10 ms	m/s	2.10	2.50	2.44	Pass
Pendulum Velocity at 20 ms	m/s	4.00	5.00	4.78	Pass
Pendulum Velocity at 30 ms	m/s	5.80	7.00	6.76	Pass
Peak "D" Plane Rotation	deg	77.0	91.0	83.9	Pass
Peak Moment in Rotation	Nm	69.0	83.0	80.6	Pass
Positive Moment Decay to 10 Nm	ms	80.0	100.0	82.3	Pass
Overall Test Results				Pass	Pass

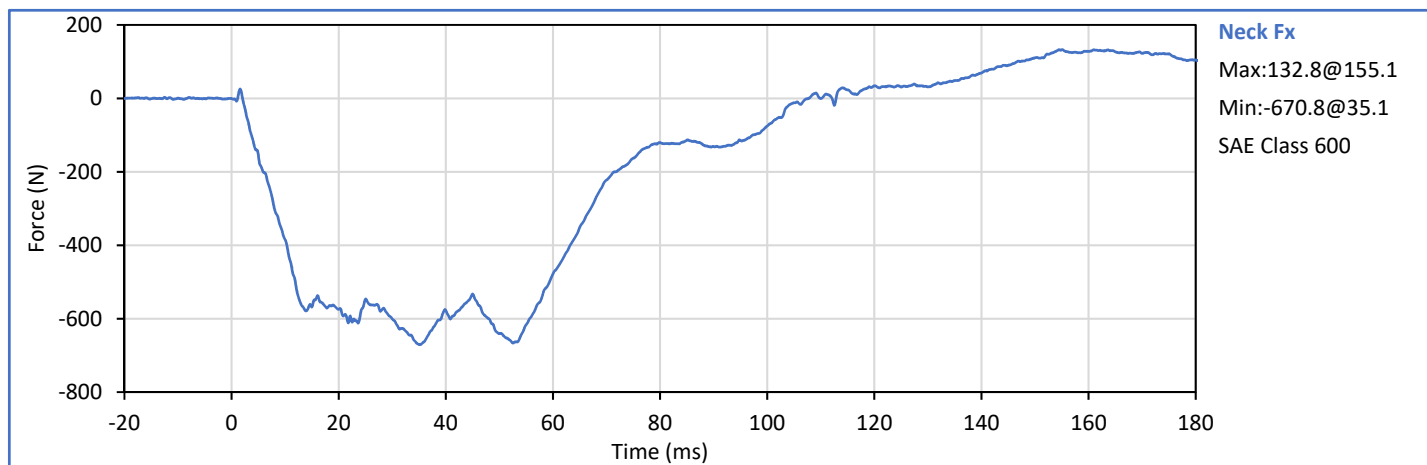
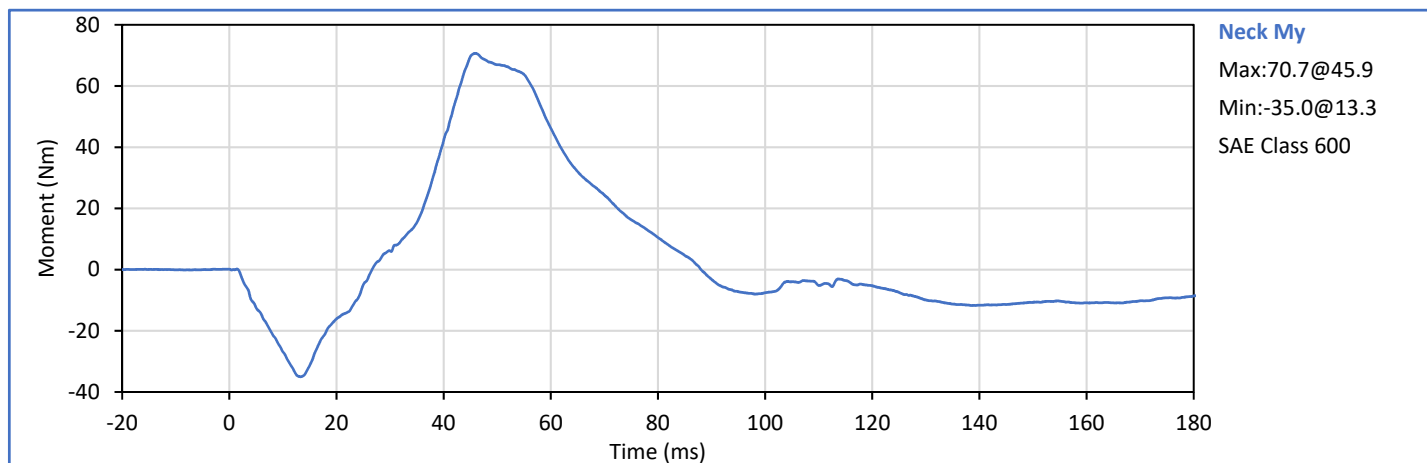
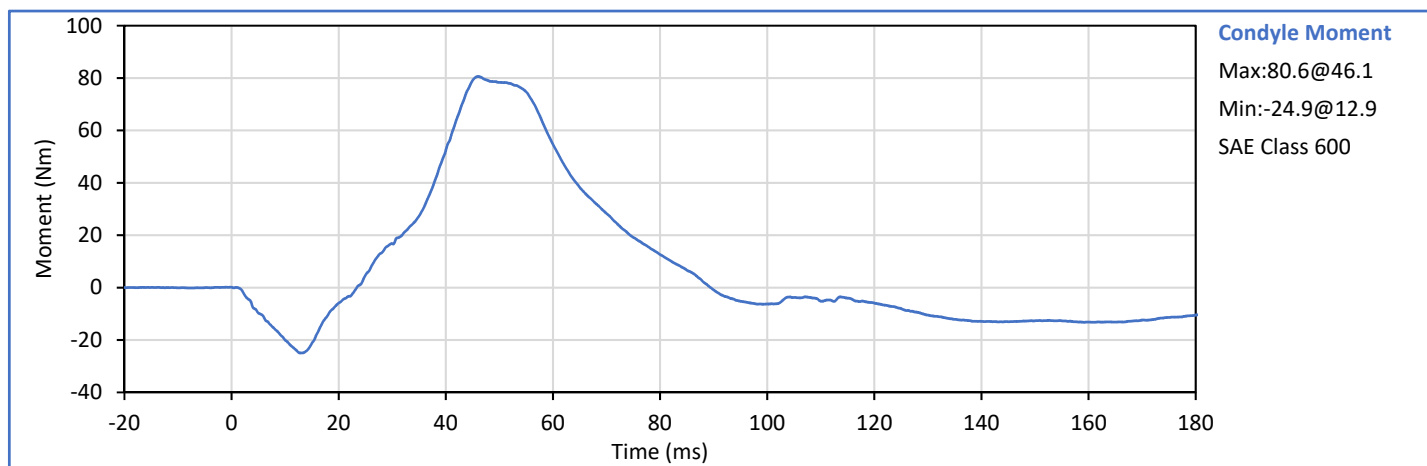


Technician: _____

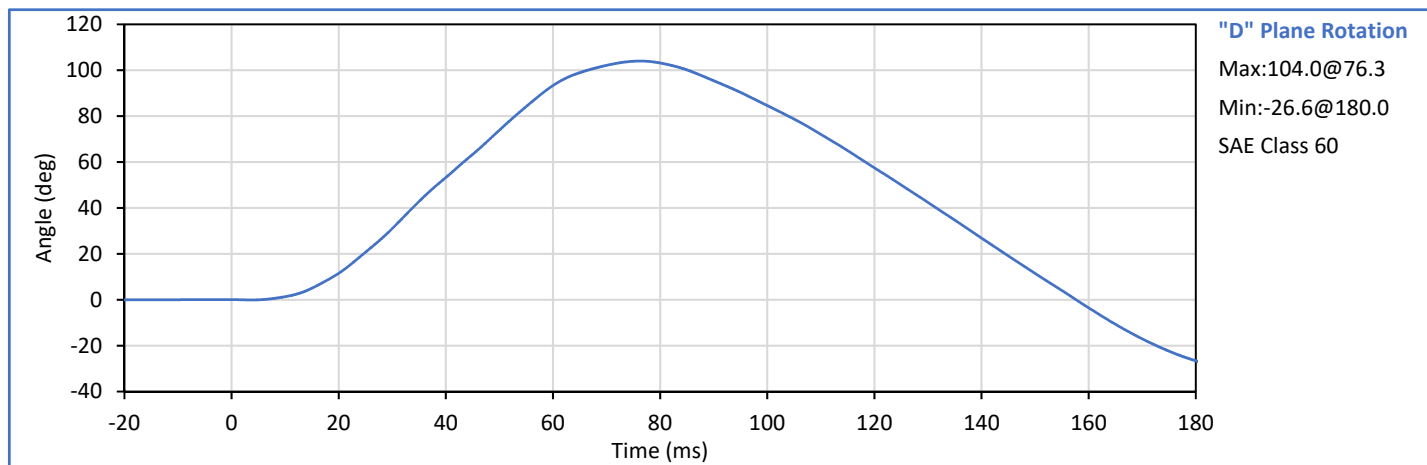
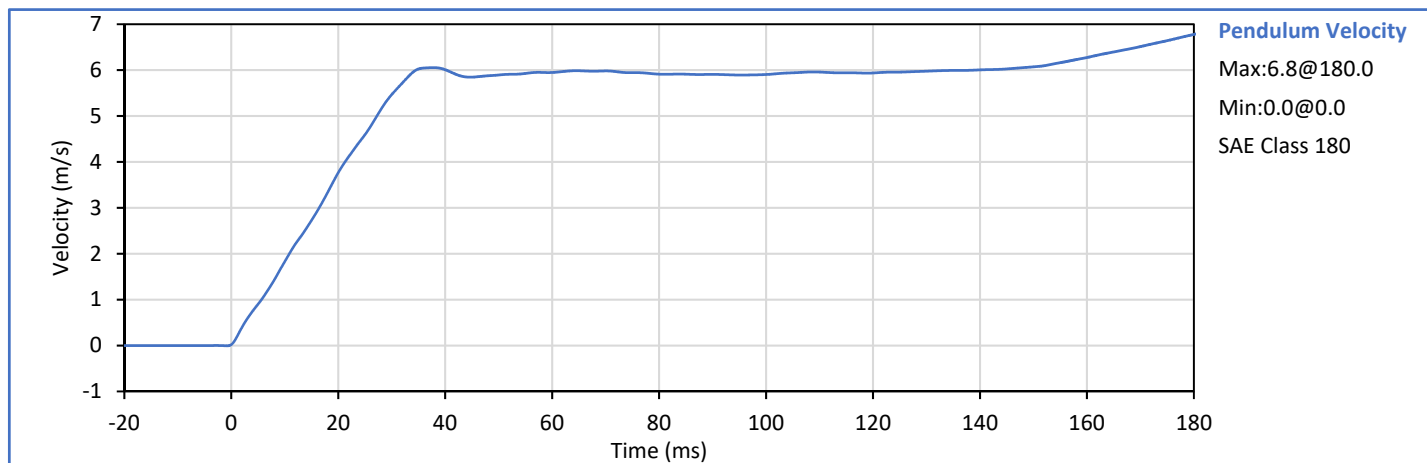
J. Hernandez

Approved By: _____

P. Puzzuto



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.5	Pass
Laboratory Humidity	%	10	70	18	Pass
Pendulum Velocity	m/s	5.95	6.19	6.05	Pass
Pendulum Velocity at 10 ms	m/s	1.50	1.90	1.83	Pass
Pendulum Velocity at 20 ms	m/s	3.10	3.90	3.77	Pass
Pendulum Velocity at 30 ms	m/s	4.60	5.60	5.47	Pass
Peak "D" Plane Rotation	deg	99.0	114.0	104.0	Pass
Peak Moment in Rotation	Nm	-65.0	-53.0	-56.8	Pass
Negative Moment Decay to -10 Nm	ms	94.0	114.0	101.5	Pass
Overall Test Results				Pass	Pass



Technician:

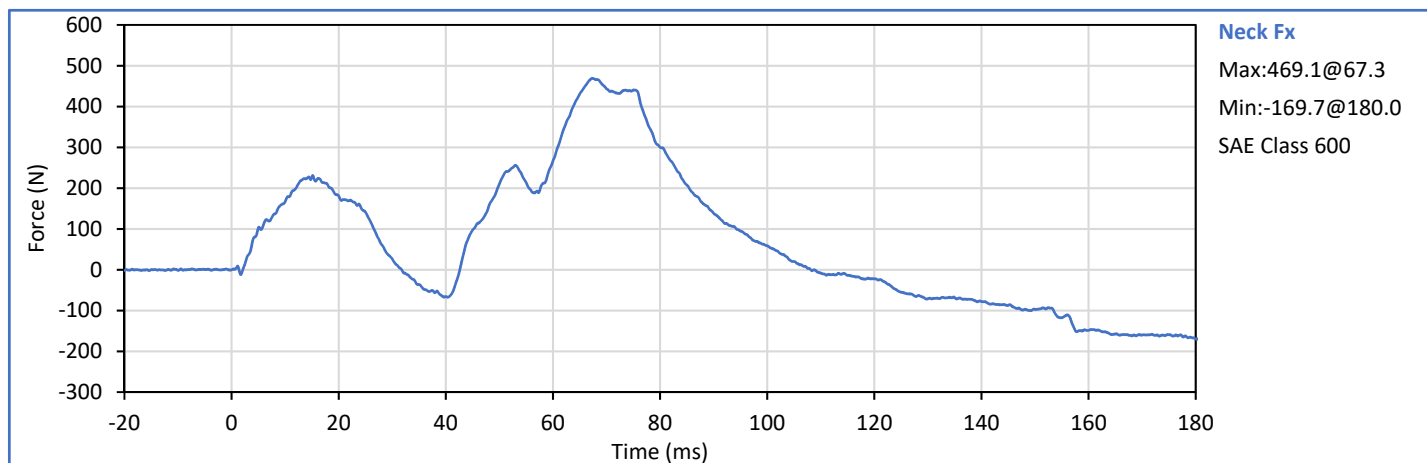
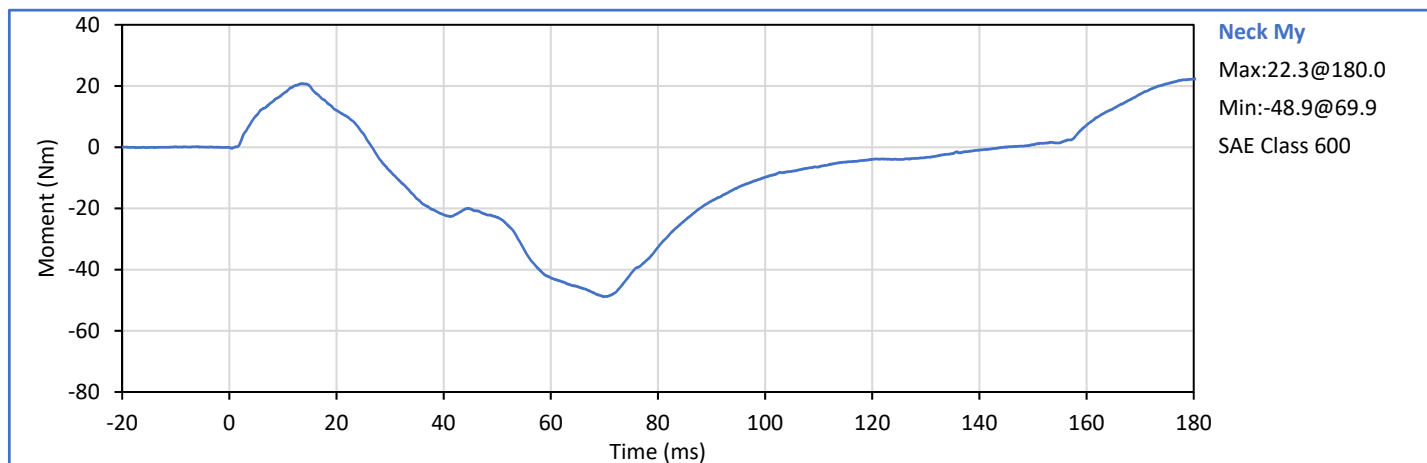
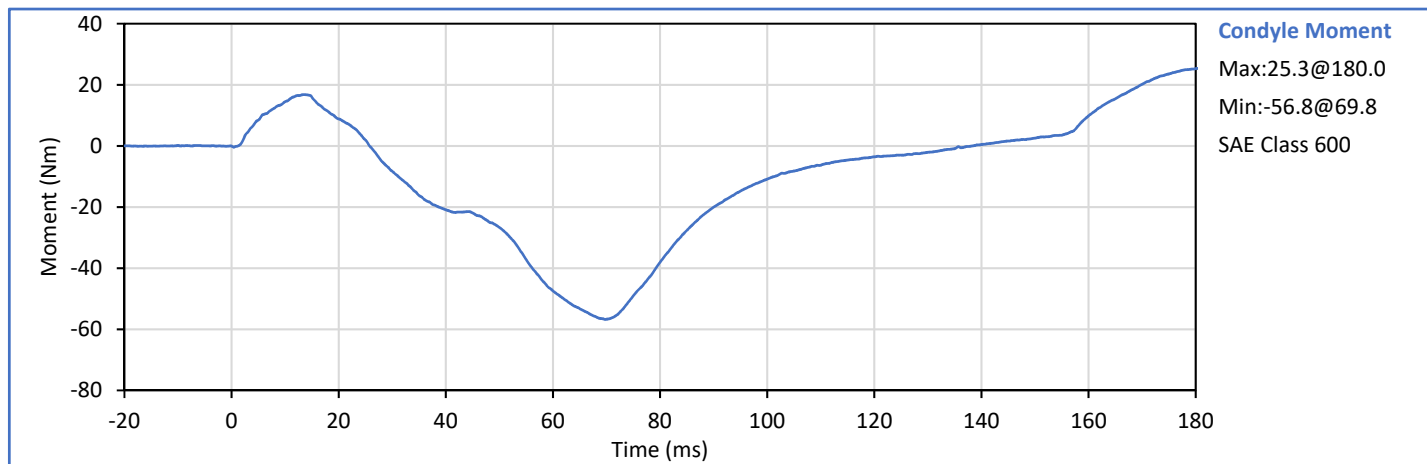
J. Hernandez

J. Hernandez

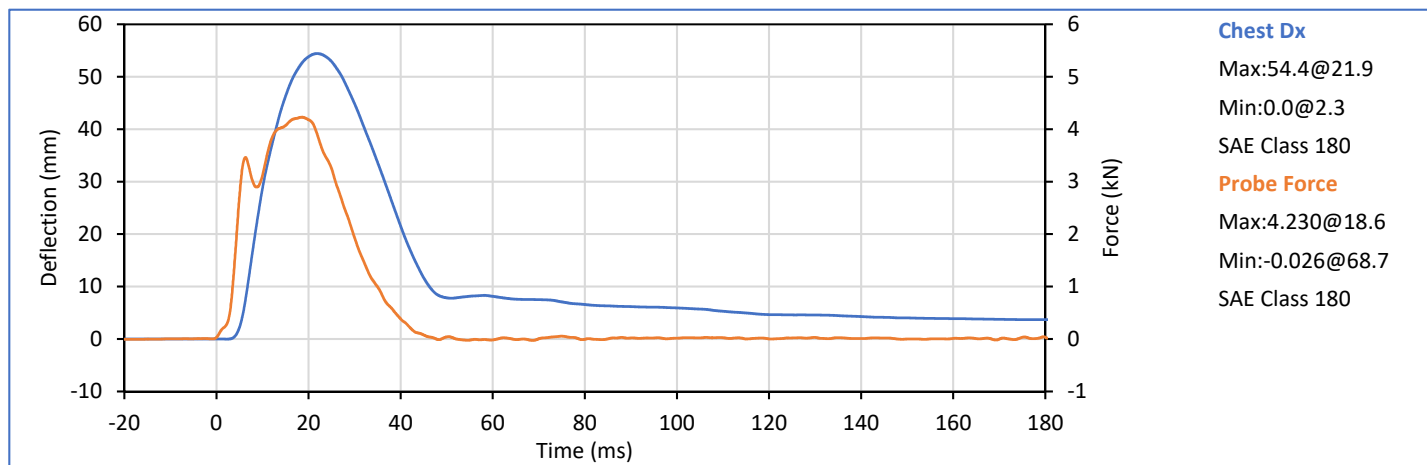
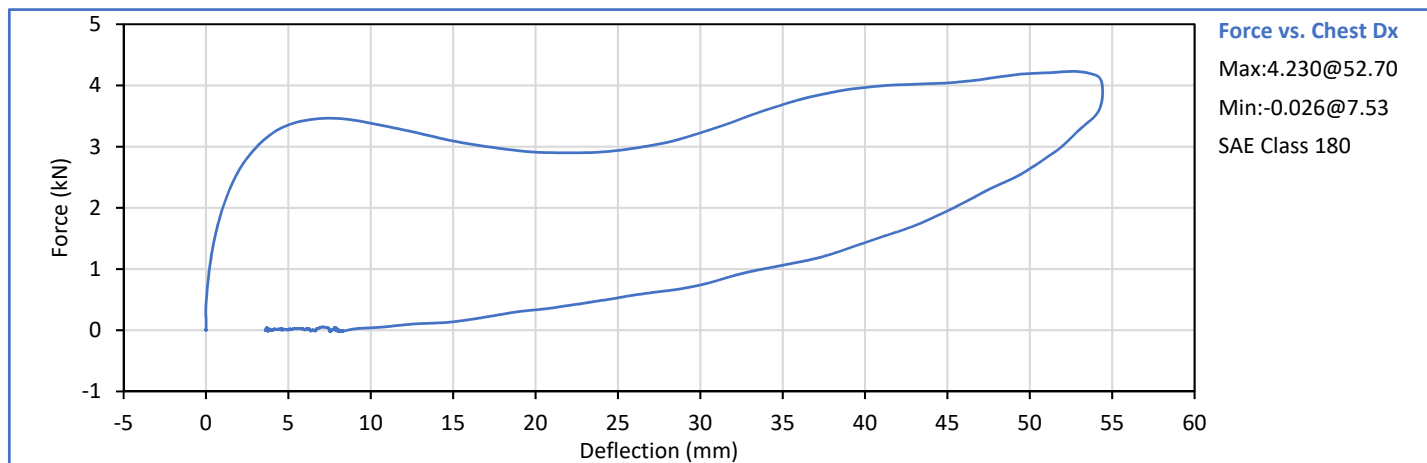
Approved By:

P. Puzzuto

P. Puzzuto



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.5	Pass
Laboratory Humidity	%	10	70	18	Pass
Probe Velocity	m/s	6.59	6.83	6.72	Pass
Peak Chest Deflection	mm	50.0	58.0	54.4	Pass
Peak Probe Force, 50 and 58 mm	kN	3.900	4.400	4.230	Pass
Peak Probe Force, 18 and 50 mm	kN	0.000	4.600	4.194	Pass
Internal Hysteresis	%	69.0	85.0	72.6	Pass
Overall Test Results				Pass	Pass



Technician:

J. Hernandez

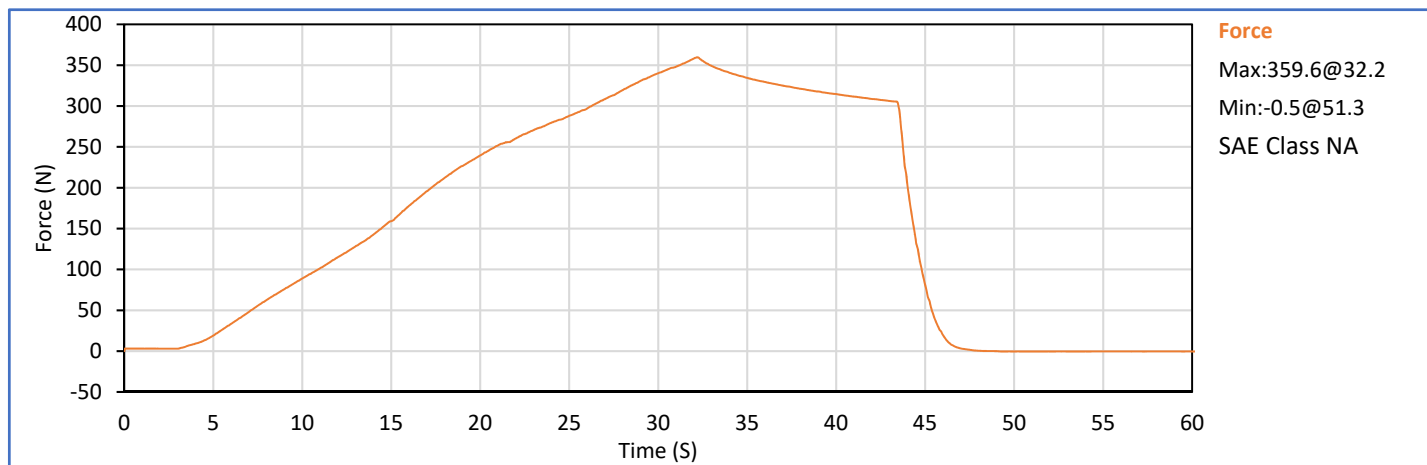
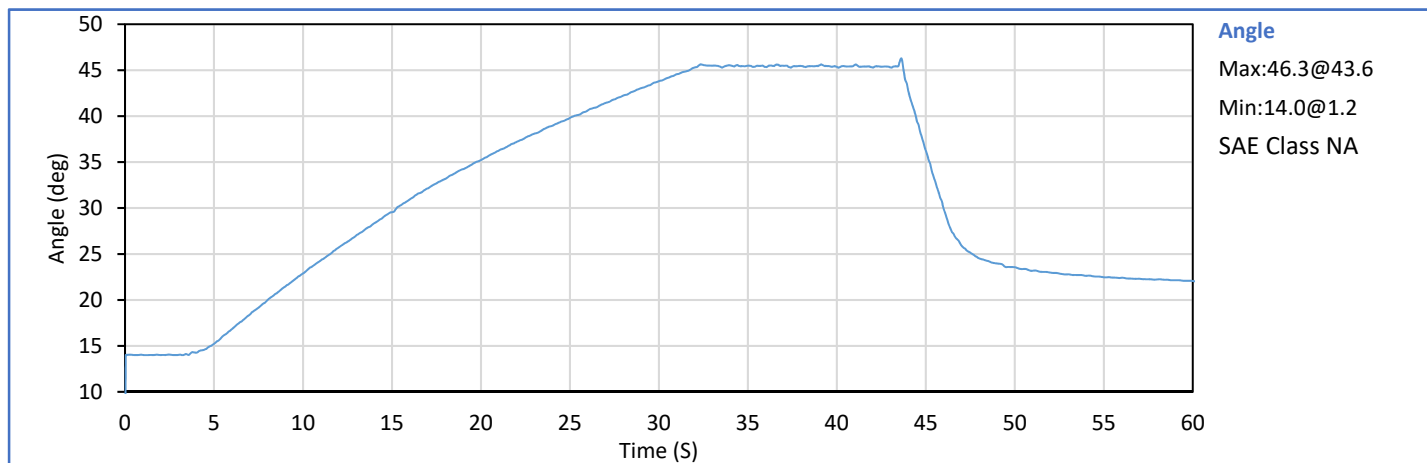
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.6	Pass
Laboratory Humidity	%	10	70	34	Pass
Orientation Angle	deg	0.0	20.0	15.1	Pass
Test Initial Angle	deg	11.0	19.0	14.0	Pass
Peak Force at 45° (+/-0.5°)	N	320.0	390.0	355.8	Pass
Torso Flexion Rate	deg/s	0.50	1.50	1.12	Pass
Final Reference Plane Angle	deg	-8.0	8.0	5.9	Pass
Overall Test Results				Pass	Pass



Technician:

J. Hernandez

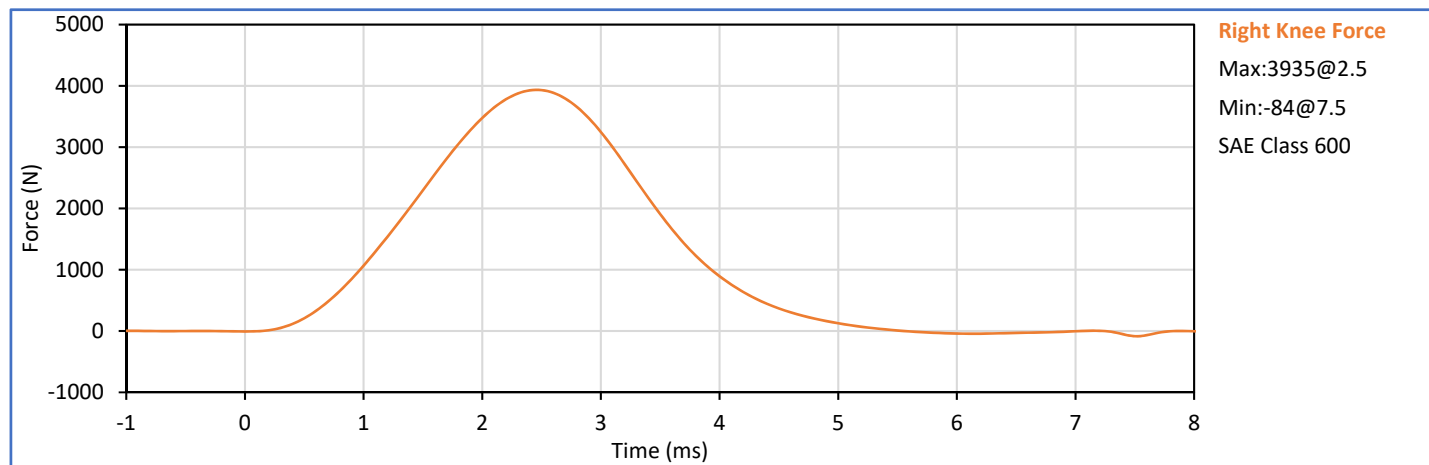
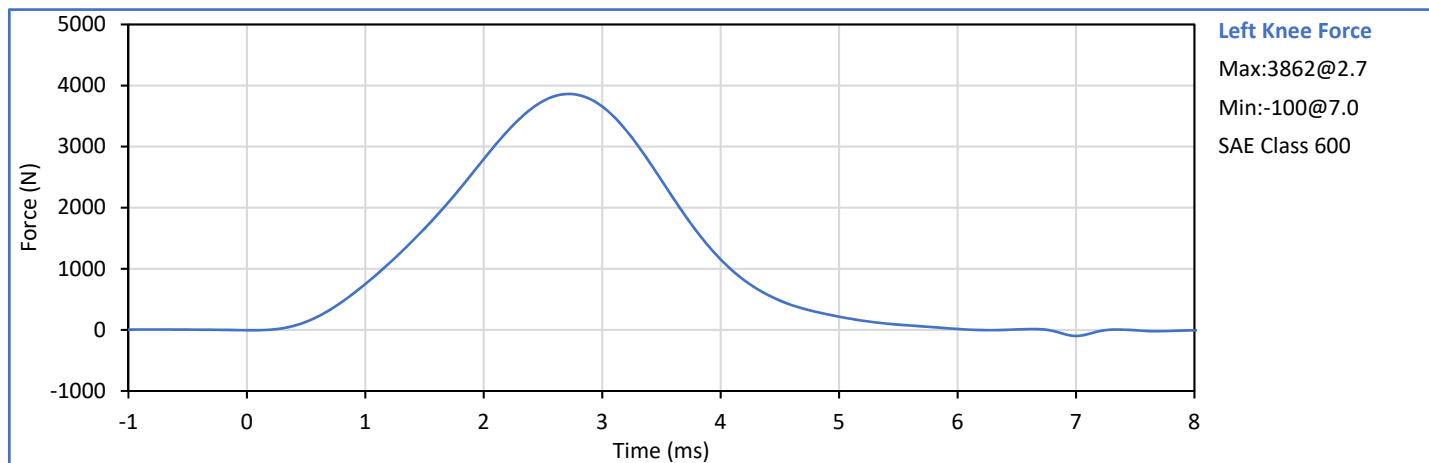
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

	Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
	Laboratory Temperature	°C	18.9	25.6	21.6	Pass
	Laboratory Humidity	%	10	70	34	Pass
Left	Probe Velocity	m/s	2.070	2.130	2.105	Pass
Knee	Peak Resistive Force	N	3450	4060	3862	Pass
Right	Probe Velocity	m/s	2.070	2.130	2.102	Pass
Knee	Peak Resistive Force	N	3450	4060	3935	Pass
Overall Test Results						Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

Table 1 - Driver ATD Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Head Acceleration X Primary	P49209	Endevco	7264C-2k	2020-08-20
Head Acceleration Y Primary	P49228	Endevco	7264C-2k	2020-08-20
Head Acceleration Z Primary	P50101	Endevco	7264C-2k	2020-08-20
Head Acceleration X Redundant	P50103	Endevco	7264C-2k	2020-08-20
Head Acceleration Y Redundant	P49210	Endevco	7264C-2k	2020-08-20
Head Acceleration Z Redundant	P58713	Endevco	7264C-2k	2020-08-20
Head Rotation Rate X	ARS7587	DTS	ARS PRO-8k (2000Hz)	2019-07-08
Head Rotation Rate Y	ARS7426	DTS	ARS PRO-8k (2000Hz)	2019-07-08
Head Rotation Rate Z	ARS7480	DTS	ARS PRO-8k (2000Hz)	2019-07-08
Upper Neck Force X	1633 Fx	R.A. Denton	1716A	2020-07-20
Upper Neck Force Y	1633 Fy	R.A. Denton	1716A	2020-07-20
Upper Neck Force Z	1633 Fz	R.A. Denton	1716A	2020-07-20
Upper Neck Moment X	1633 Mx	R.A. Denton	1716A	2020-07-20
Upper Neck Moment Y	1633 My	R.A. Denton	1716A	2020-07-20
Upper Neck Moment Z	1633 Mz	R.A. Denton	1716A	2020-07-20
Chest Acceleration X Primary	P52112	Endevco	7264C-2k	2020-08-20
Chest Acceleration Y Primary	P49208	Endevco	7264C-2k	2020-08-20
Chest Acceleration Z Primary	P51264	Endevco	7264C-2k	2020-08-20
Chest Acceleration X Redundant	P49461	Endevco	7264C-2k	2020-08-20
Chest Acceleration Y Redundant	P58774	Endevco	7264C-2k	2020-08-20
Chest Acceleration Z Redundant	P49168	Endevco	7264C-2k	2020-08-20
Chest Deflection	0606 (H3)	Servo	14CBI-3615	2020-08-27
Pelvis Acceleration X	P49238	Endevco	7264C-2k	2020-08-20
Pelvis Acceleration Y	P58877	Endevco	7264C-2k	2020-08-20
Pelvis Acceleration Z	P50087	Endevco	7264C-2k	2020-08-20
Left Femur Force Z	120 (pri)	R.A. Denton	3821JTF	2020-01-06
Right Femur Force Z	130 (pri)	R.A. Denton	3821JTF	2020-01-06
Left Femur Force Z Redundant	120 (red)	R.A. Denton	3821JTF	2020-01-06
Right Femur Force Z Redundant	130 (red)	R.A. Denton	3821JTF	2020-01-06
Left Upper Tibia Moment X	DH3054 Mx	R.A. Denton	IF-857	2020-02-18
Left Upper Tibia Moment Y	DH3054 My	R.A. Denton	IF-857	2020-02-18
Left Upper Tibia Force Z	DH3054 Fz	R.A. Denton	IF-857	2020-02-18
Left Lower Tibia Moment X	DH3317 Mx	FTSS	IF-853	2019-10-16
Left Lower Tibia Moment Y	DH3317 My	FTSS	IF-853	2019-10-16
Left Lower Tibia Force Z	DH3317 Fz	FTSS	IF-853	2019-10-16
Right Upper Tibia Moment X	482 Mx	R.A. Denton	3643	2020-02-18
Right Upper Tibia Moment Y	482 My	R.A. Denton	3643	2020-02-18
Right Upper Tibia Force Z	482 Fz	R.A. Denton	3643	2020-02-18
Right Lower Tibia Moment X	499 Mx	R.A. Denton	3644	2020-02-18
Right Lower Tibia Moment Y	499 My	R.A. Denton	3644	2020-02-18
Right Lower Tibia Force Z	499 Fz	R.A. Denton	3644	2020-02-18
Left Ankle Acceleration X	03E20-N09	Entran	EGEB6Q-2k	2020-08-24
Left Ankle Acceleration Z	03D30-N13	Entran	EGEB6Q-2k	2020-08-24
Left Toe Acceleration Z	03H07-Z10	Entran	EGEB6Q-2k	2020-08-24
Right Ankle Acceleration X	03E29-N20	Entran	EGEB6Q-2k	2020-08-24
Right Ankle Acceleration Z	03E18-F02	Entran	EGEB6Q-2k	2020-08-24
Right Toe Acceleration Z	05H31-Z04	Entran	EGEB6Q-2k	2020-08-24
Seat Belt Outside Lap Force	Not installed			
Seat Belt Upper Diagonal Force	Not installed			

Table 2 - Right Front Passenger ATD Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Head Acceleration X Primary	P58902	Endevco	7264C-2k	2020-08-25
Head Acceleration Y Primary	P58900	Endevco	7264C-2k	2020-08-25
Head Acceleration Z Primary	P58989	Endevco	7264C-2k	2020-08-25
Head Acceleration X Redundant	P58906	Endevco	7264C-2k	2020-08-25
Head Acceleration Y Redundant	P58983	Endevco	7264C-2k	2020-08-25
Head Acceleration Z Redundant	P58901	Endevco	7264C-2k	2020-08-25
Head Rotation Rate X	ARS7473	DTS	ARS PRO-8k (2000Hz)	2019-07-08
Head Rotation Rate Y	ARS7342	DTS	ARS PRO-8k (2000Hz)	2019-07-08
Head Rotation Rate Z	ARS7548	DTS	ARS PRO-8k (2000Hz)	2019-07-09
Upper Neck Force X	284 Fx	FTSS	IF-205	2020-01-07
Upper Neck Force Y	284 Fy	FTSS	IF-205	2020-01-07
Upper Neck Force Z	284 Fz	FTSS	IF-205	2020-01-07
Upper Neck Moment X	284 Mx	FTSS	IF-205	2020-01-07
Upper Neck Moment Y	284 My	FTSS	IF-205	2020-01-07
Upper Neck Moment Z	284 Mz	FTSS	IF-205	2020-01-07
Chest Acceleration X Primary	P58742	Endevco	7264C-2k	2020-08-26
Chest Acceleration Y Primary	P51640	Endevco	7264C-2k	2020-08-26
Chest Acceleration Z Primary	P58988	Endevco	7264C-2k	2020-08-26
Chest Acceleration X Redundant	P51632	Endevco	7264C-2k	2020-08-26
Chest Acceleration Y Redundant	P58793	Endevco	7264C-2k	2020-08-26
Chest Acceleration Z Redundant	P58790	Endevco	7264C-2k	2020-08-26
Chest Deflection	2527 (HF)	Servo	14CBI-3615	2020-08-27
Pelvis Acceleration X	P50076	Endevco	7264C-2k	2020-08-25
Pelvis Acceleration Y	P58897	Endevco	7264C-2k	2020-08-25
Pelvis Acceleration Z	P51724	Endevco	7264C-2k	2020-08-25
Left Femur Force Z	114 (pri)	R.A. Denton	3821JTF	2020-01-06
Right Femur Force Z	125 (pri)	R.A. Denton	3821JTF	2020-01-06
Left Femur Force Z Redundant	114 (red)	R.A. Denton	3821JTF	2020-01-06
Right Femur Force Z Redundant	125 (red)	R.A. Denton	3821JTF	2020-01-06
Left Upper Tibia Moment X	468 Mx	R.A. Denton	3643	2020-02-18
Left Upper Tibia Moment Y	468 My	R.A. Denton	3643	2020-02-18
Left Upper Tibia Force Z	468 Fz	R.A. Denton	3643	2020-02-18
Left Lower Tibia Moment X	91 Mx	R.A. Denton	3644	2020-02-18
Left Lower Tibia Moment Y	91 My	R.A. Denton	3644	2020-02-18
Left Lower Tibia Force Z	91 Fz	R.A. Denton	3644	2020-02-18
Right Upper Tibia Moment X	477 Mx	R.A. Denton	3643	2020-02-18
Right Upper Tibia Moment Y	477 My	R.A. Denton	3643	2020-02-18
Right Upper Tibia Force Z	477 Fz	R.A. Denton	3643	2020-02-18
Right Lower Tibia Moment X	399 Mx	R.A. Denton	3644	2020-02-11
Right Lower Tibia Moment Y	399 My	R.A. Denton	3644	2020-02-11
Right Lower Tibia Force Z	399 Fz	R.A. Denton	3644	2020-02-11
Left Ankle Acceleration X	A199899	MSI	64C-2k	2020-07-20
Left Ankle Acceleration Z	A199908	MSI	64C-2k	2020-07-20
Left Toe Acceleration Z	A199930	MSI	64C-2k	2020-07-20
Right Ankle Acceleration X	A202287	MSI	64C-2k	2020-07-20
Right Ankle Acceleration Z	A201195	MSI	64C-2k	2020-07-20
Right Toe Acceleration Z	A201202	MSI	64C-2k	2020-07-20
Seat Belt Outside Lap Force	Not installed			
Seat Belt Upper Diagonal Force	Not installed			

Table 3 - Vehicle Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Left Rear Primary Ax	A273403	MSI	52F-2k	2020-06-17
Right Rear Primary Ax	10863	Endevco	757F-2k	2020-06-17
Engine Top Ax	A298378	MSI	52F-2k	2020-05-18
Engine Bottom Ax	A265914	MSI	52F-2k	2020-07-17
Left Rear Az	A298292	MSI	52F-2k	2020-05-24
Right Rear Az	A273395	MSI	52F-2k	2020-07-24
Left Rear Redundant Ax	A208767	MSI	52F-2k	2020-07-18
Right Rear Redundant Ax	A298363	MSI	52F-2k	2020-06-13