

REPORT NUMBER TR-P28001-09-NC

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**NISSAN MOTOR CO., LTD.
2008 NISSAN FRONTIER SE 4X4
2-DOOR TRUCK**

NHTSA NUMBER: M85206

**PREPARED BY:
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NOVEMBER 6, 2007


FINAL REPORT


**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
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OFFICE OF CRASHWORTHINESS STANDARDS
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Technical Report Documentation Page

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2008 Nissan Frontier SE 4X4 2-Door Truck at Karco Engineering, LLC on November 6, 2007. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 55.88 km/h. The ambient temperature at the barrier face at the time of impact is 25.0 degrees Celcius. The vehicle's maximum post-test static crush is 521 to the left of the vehicle's centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:					
Measurement Description		Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)		N/A	1000	732.0	494.6
Max. Chest Accel. (3 msec Clip)		Gs	60	45.6	39.9
Left Femur Force		Newtons	10008	-3393.2	-3199.0
Right Femur Force		Newtons	10008	-2394.6	-2139.6
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SECTION 1

PURPOSE AND SUMMARY OF TEST M85206

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the New Car Assessment Program (NCAP) sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-06-D-00027. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph (48.3 km/h) requirements.

The 35 mph (56.3 km/h) frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated July 2005. Data was obtained indicant of FMVSS 208 "Occupant Crash Protection", FMVSS 212, "Windshield Retention", FMVSS 219, "Windshield Zone Intrusion (Partial)", and FMVSS 301 "Fuel System Integrity", performance. Procedures for receiving, inspection, testing and reporting of test results are described in the test procedures and are not repeated in this report.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2008 Nissan Frontier SE 4X4 2-Door Truck at a velocity of 55.88 km/h. The test was performed at Karco Engineering, LLC on November 6, 2007.

Three (3) real-time and fourteen (14) 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 number 14 (page number 24) of this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head (primary and redundant), chest (primary and redundant) and pelvis triaxial accelerometers, chest displacement potentiometers, six-axis upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were placed on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. Shoulder belt spool-off was measured for the driver and passenger dummies. The driver (position 1) ATD (Serial No. 035) and the right-front passenger (position 2) ATD (Serial No. 034) were calibrated one test prior to this test.

One hundred and thirty-two (132) channels of data were recorded using a TDAS data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the Dummy Response data traces, and Appendix C contains the Dummy Calibration data.

There was 100 percent windshield retention and there was no intrusion into the protected zone of the windshield during the impact event. There was minor stoddard solvent leakage after the event. This amount was immeasurable.

The maximum static crush of the vehicle was 521 mm at DPD3 to the left of the vehicle's centerline. Both the driver and the passenger side doors remained closed and latched 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 airbag and headrest. The ATD's chest also contacted the airbag. Both knees contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD's head contacted the airbag and headrest. The ATD's chest contacted the airbag. Both knees contacted the glove box.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC	3 msec Clip (g)	Chest Defl. (mm)	Left Femur (N)	Right Femur (N)
Driver	732.0	45.6	-38.4	-3393.2	-2394.6
Passenger	494.6	39.9	-23.3	-3199.0	-2139.6

Additional data plots for this test are available in the research and development section of the NHTSA website. The website can be found at: www.NHTSA.Dot.Gov

SECTION 2

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(tf - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.88
Test Weight	kg	2275
Impact Angle	degrees	0
Average Rebound	mm	495
Maximum Static Crush	mm	521

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door opening	Remained closed and latched, opened w/o tools	Remained closed and latched, opened w/o tools
Rear Door Opening	Remained closed and latched, opened w/o tools	Remained closed and latched, opened w/o tools
Seat Track Shift (mm)	None	None
Seat Back Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 035	50% Male Hybrid III No. 034
Head Contact	Airbag, Headrest	Airbag, Headrest
Chest Contact	Airbag	Airbag
Abdomen Contact	None	None
Left Knee Contact	Knee Bolster	Glovebox
Right Knee Contact	Knee Bolster	Glovebox

MOVIE COVERAGE

Cameras	Standard	Additional
High Speed	14	0
Real Time	1	2
Total	15	2

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	8
Rigid Barrier Load Cells	36
Total	132

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M85206	Anti-Lock Brakes	Yes
Make	Nissan	All Wheel Drive	Yes
Model	Frontier SE 4X4	Power Steering	Yes
Body Style	2-Door Truck	Driver Front Airbag	Yes
Vin No.	1N6AD06W18C402072	Driver Side Airbag	No
Color	Red	Driver Head Airbag	No
Delivery Date	10/30/2007	Driver Curtain Airbag	No
Odometer (Miles)	34.0	Pass. Airbag	Yes
Dealer	Valley-Hi Nissan	Pass. Side Airbag	No
Transmission	5-Speed Automatic	Pass. Head Airbag	No
Final Drive	4WD	Pass. Curtain Airbag	No
Type/No. Cyl.	V6	Pre-Tensioners	Yes
Engine Disp. (L)	4.0	Load Limiters	Yes
Engine Placement	Longitudinal	Bucket Seats	Yes
Roof Rack	No	Air. Cond.	Yes
Sunroof/T-Top	No	AM/FM CD	Yes
Tinted Glass	Yes	Tilt Steering	Yes
Traction Control	No	Automatic Door Locks	No
Power Brakes	Yes	Power Windows	No
Front Disc	Yes	Power Seats	No
Rear Disc	Yes	Other	n/a

Does Owners Manual provide instructions to turn off automatic door locks.

N/A

DATA FROM MANUFACTURER

Manufactured By	Nissan Motor Co., Ltd.	GVWR (kg)	2581
Date of Manufacture	Aug-07	GAWR Front (kg)	1495
		GAWR Rear (kg)	1511

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket			
Number of Occupants	2			2
Capacity Weight (VCW) (kg)				600
Cargo Weight (RCLW) (kg)				136

DATA SHEET NO. 2...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

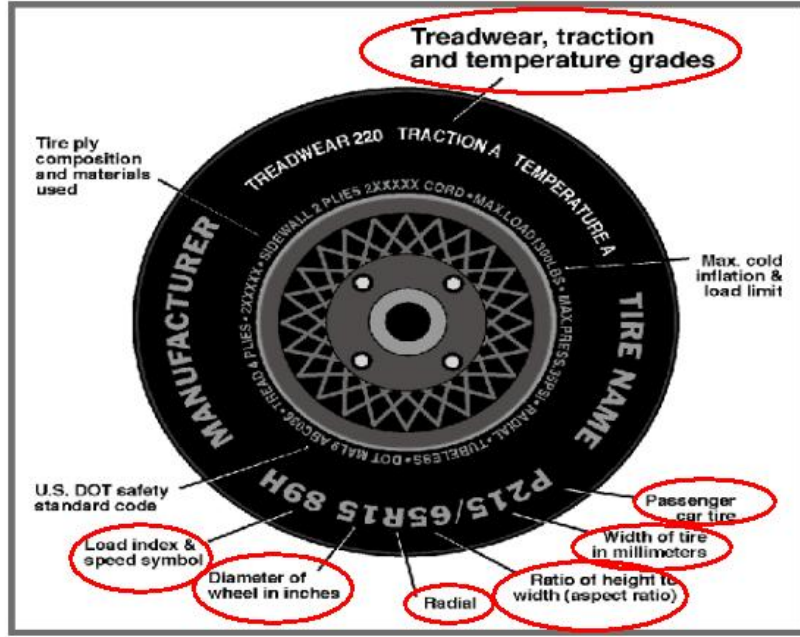
Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

Collect year, make, model, VIN, items circled in red, and tire manufacturer and tire name.



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	240	240
Cold Pressure (kpa)	240	240
Recommended Tire Size	P265/70R16	P265/70R16
Tire Size on Vehicle	P265/70R16	P265/70R16
Tire Manufacturer	BF Goodrich	BF Goodrich
Treadwear	440	440
Traction	B	B
Temperature Grades	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Nylon	2 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	111T	111T
Tire Material	Polyester, Steel Nylon	Polyester, Steel Nylon
DOT Safety Code Right	AP72FB21	AP72FB21
DOT Safety Code Left	AP72FB21	AP72FB21

DATA SHEET NO. 2...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	575	427	1002	617	537	1154
Right	kg	562	428	990	598	523	1121
Ratio	%	57.1	42.9	100.0	53.4	46.6	100.0
Totals	kg	1137	855	1992	1215	1060	2275

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1992
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	136
Calculated Vehicle Target Wt. (TVTW)	kg	2280

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	884	884	917	910	1652
As Tested	mm	872	874	883	881	1794

Vehicle Wheel Base (mm) 3850

Weight of Ballast Secured in cargo area (kg) 25

Weight of Items Removed (kg) 5

Vehicle Components Removed Floor mats, and spare tire tools.

* Ballast weight does not include cameras, instrumentation and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 79.86

Actual Test Volume with entire fuel System Filled (L) 74.16

Test Fluid Type: Stoddard Solvent

Kinematic Viscosity: as per ASTM Standard D484-71 Red

Is Vehicle Fuel Pump Electric or Mechanical? Electric

If electric, does pump operate with ignition switch "On" & engine "OFF" Yes

Fuel System Particulars: Electric fuel pump. Activated when electrical system is activated.
Fuel pump will run during the operation of the engine.

DATA SHEET NO. 3

POST-TEST IMPACT DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	55.88
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	55.86

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	5125	4699	426
Center	mm	5233	4713	520
Right Side	mm	5125	4718	407

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	502
Center	mm	493
Right Side	mm	490
Average	mm	495

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

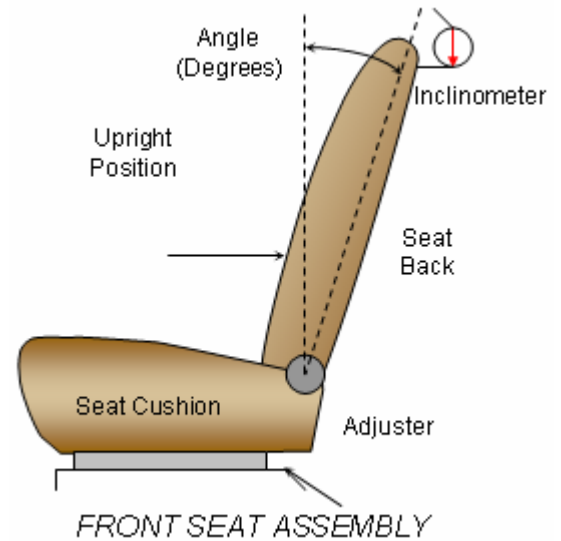
NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturer's designated angle. The procedure is as follows: Seat back angle was measured at the headrest with a digital inclinometer.



SEAT BACK ANGLES

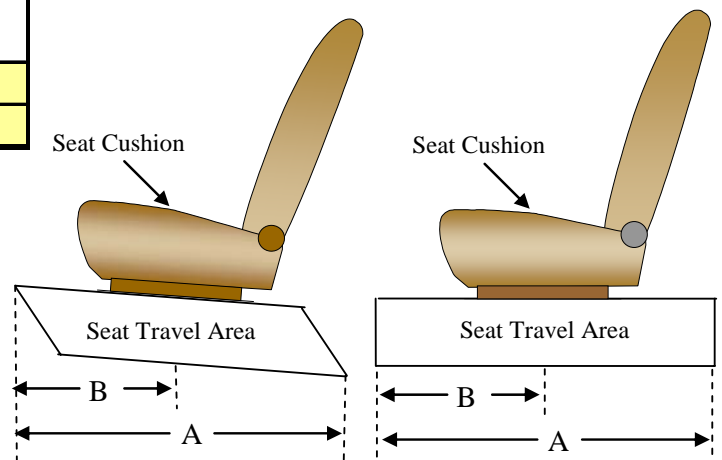
	Deg.
Driver w/seated Dummy	10.2 @ Headrest
Passenger w/seated Dummy	12.8 @ Headrest

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position. There were vertical adjustments on the seats that were equipped with the vehicle. They were placed at the lowermost position.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position
Driver Seat	21 detents	11th Detent
Passenger Seat	21 detents	11th Detent



SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	1
Passenger Seat	4	1

DATA SHEET NO. 4...(CONTINUED)

TEST VEHICLE INFORMATION

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

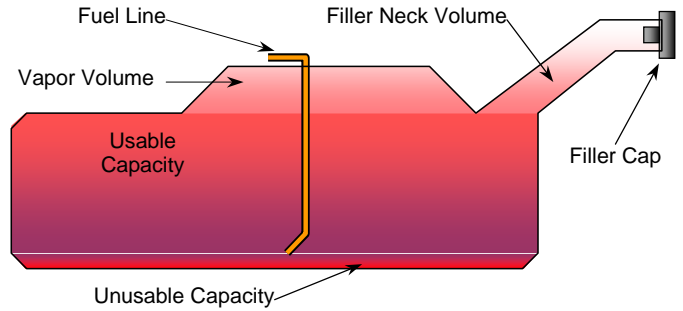
Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	79.86
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	73.47 to 75.06
Actual Amount of Solvent used	74.16

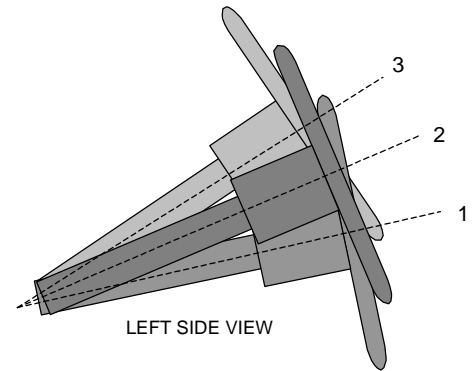
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.



VEHICLE FUEL TANK ASSEMBLY

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. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Degrees	Fore/Aft Position (mm)
Lowermost position No. 1	15.7	
Geometric center position No. 2	24.8	
Uppermost position No. 3	33.9	

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		31.3		
SWA	Steering Wheel Angle		67.4		
SCA	Steering Column Angle		22.6		
SA	Seat Back Angle		10.2 @ Headrest		12.8 @ Headrest
HZ	Head to Roof (Z)	187	90.0	196	90.0
HH	Head to Header	362		354	
HW	Head to Windshield	574		574	
HR	Head to Side Header (Y)	266		270	
NR	Nose to Rim	379	11.6		
CD	Chest to Dash	544		498	
CS	Chest to Steering Hub	304			
RA	Rim to Abdomen	176			
KDL	Left Knee to Dash	121	23.2	95	
KDR	Right Knee to Dash	112		120	7.5
PA	Pelvic Angle		24.4		23.3
TA	Tibia Angle		49.3		60.0
KK	Knee to Knee (Y)	315		280	
SK	Striker to Knee	633	3.2	635	3.3
ST	Striker to Head	600	80.4	575	75.8
SH	Striker to H-Point	248	0.0	258	0.0
SHY	Striker to H-Point (Y)	158		148	
HS	Head to Side Window	335		310	
HD	H-Point to Door (Y)	159		180	
AD	Arm to Door (Y)	123		120	

DATA SHEET NO. 5...(CONTINUED)

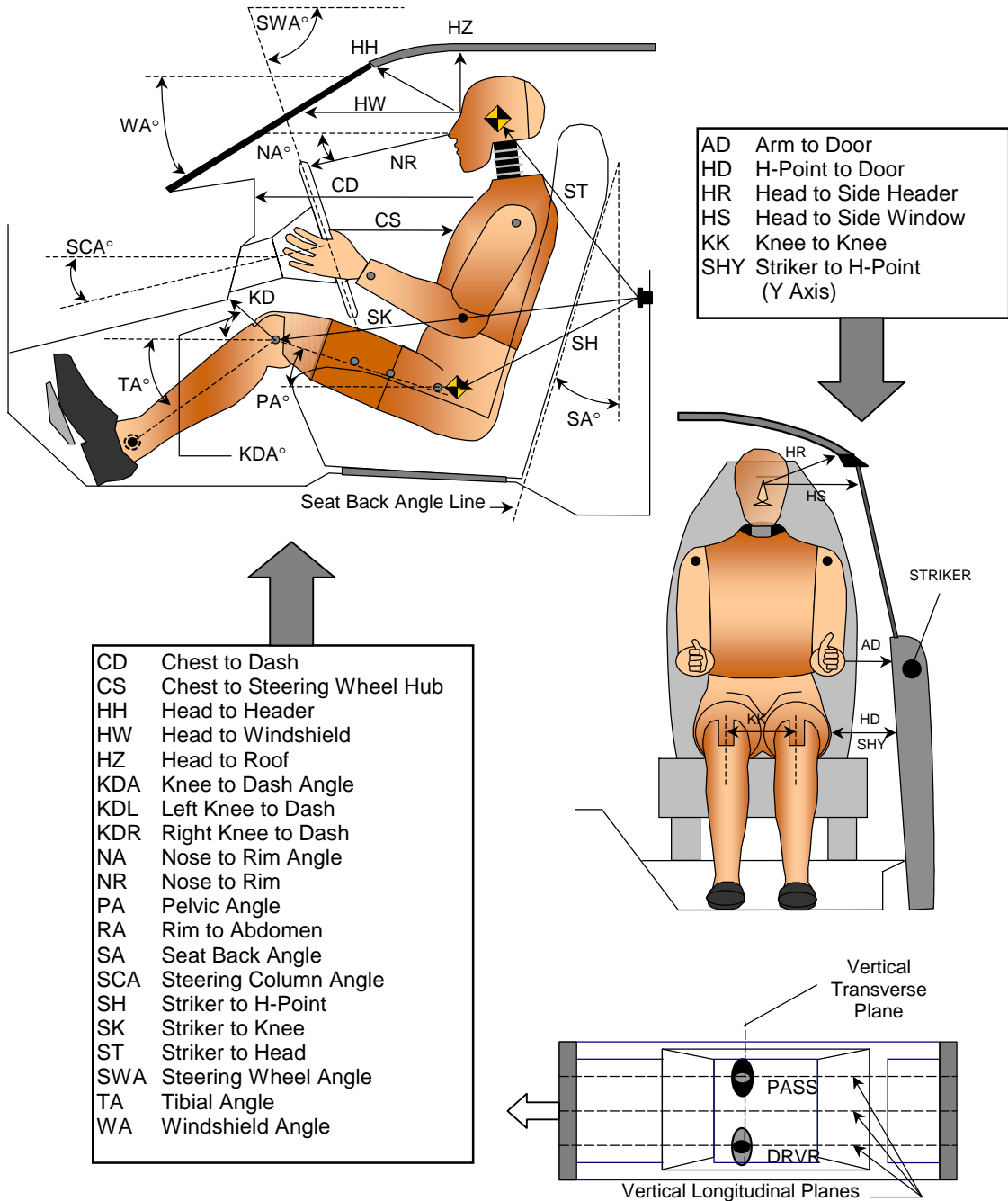
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6

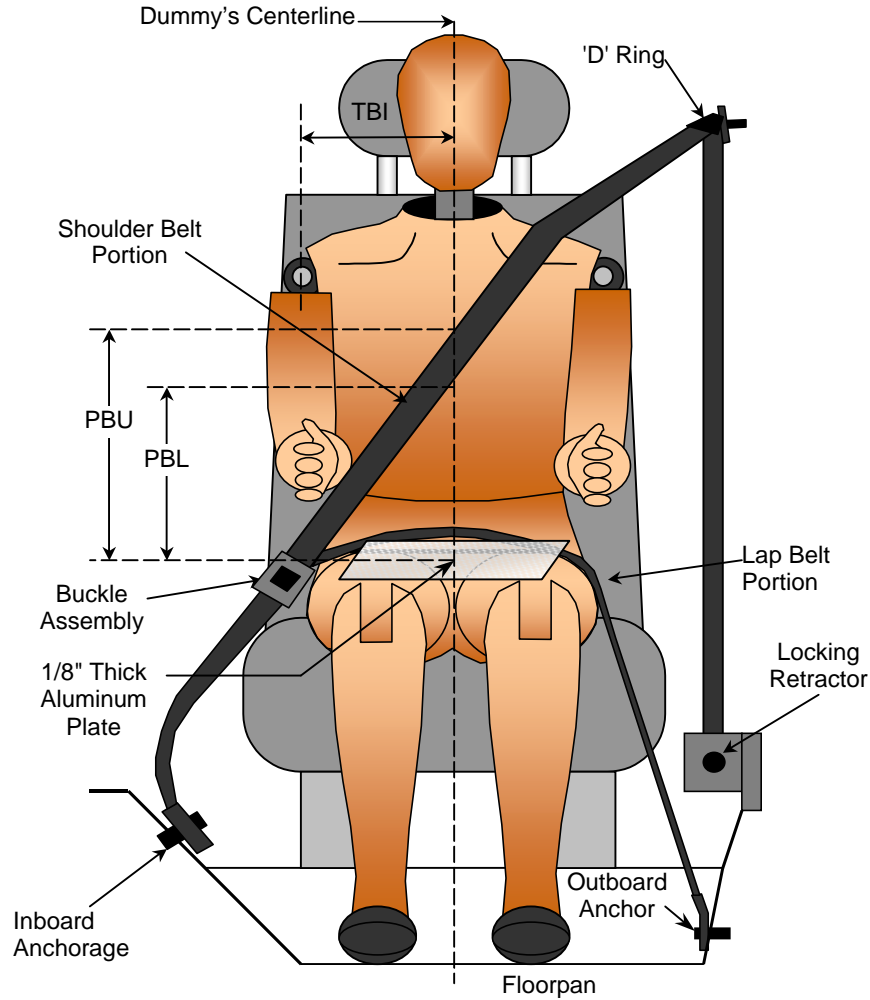
SEAT BELT POSITIONING DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	225	235
PBU - Top Surface of reference to belt upper edge	mm	338	323
PBL - Top Surface of reference to belt lower edge	mm	265	245
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7**VEHICLE ACCELEROMETER LOCATIONS**Test Vehicle: 2008 Nissan Frontier XE 4X4 2-Door TruckNHTSA No.: M85206Test Program: NHTSA 35mph NCAPTest Date: 11/06/07**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

No.	Accelerometer Location	Measurement (mm)		
		X	Y	Z
1	Left Rear X-Member	2735	-675	545
2	Right Rear X-Member	2730	675	545
3	Engine Top			
4	Engine Bottom	4340	0	215
5	Left Brake Caliper	4285	-750	300
6	Right Brake Caliper	4285	750	300
7	Instrument Panel			
8	Left Rear X-Member (Z-Axis)	2735	-675	545
9	Right Rear X-Member (Z-Axis)	2730	675	545

1.) No longer required by NHTSA

2.) Not installed

DATA SHEET NO. 8

SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	710	710
Shoulder Belt length as measured on ATD	mm	847	896
Lap Belt length as measured on ATD	mm	879	843
Remainder of belt on reel	mm	916	836
Total belt length for continuous webbing systems	mm	3352	3285

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	172	218
As determined electronically	mm	176	296

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm		

* Not used with shoulder belt pre-tensioner systems

DATA SHEET NO. 9

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

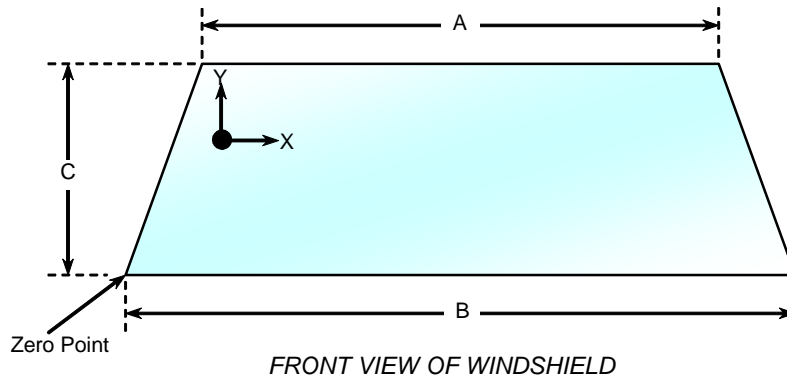
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive, and rubber and plastic molding.

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

Temperature of windshield molding during test: 21.7 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2135	2135	100
Right Side	2135	2135	100
Total	4270	4270	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1210	10
B	mm	1520	85
C-Left	mm	770	10
C-Right	mm	770	10

DATA SHEET NO. 10

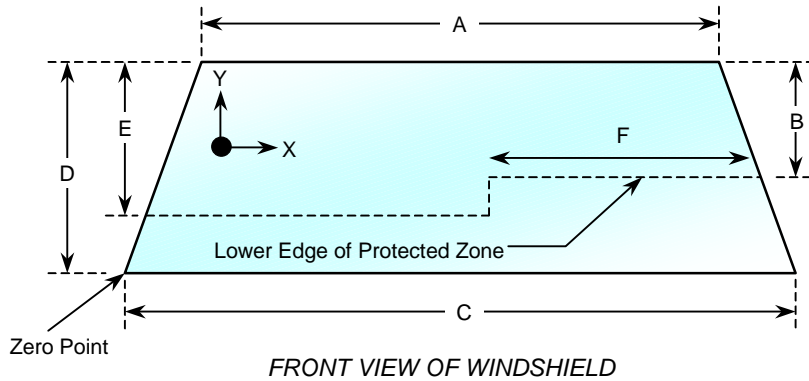
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07



WINDSHIELD AND PROTECTED ZONE

Item	Units	Value
A	mm	1210
B	mm	465
C	mm	1520
D	mm	770
E	mm	475
F	mm	930

AREA OF PROTECTED ZONE FAILURES

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

X	Y

- 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

DATA SHEET NO. 11

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck NHTSA No.: M85206
Test Program: NHTSA 35mph NCAP Test Date: 11/06/07

Test Time: 12:30 PM

Temperature: 25.0 deg. C

STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Location Details: An immeasurable amount of solvent leaked after 30 minutes.

DATA SHEET NO. 12

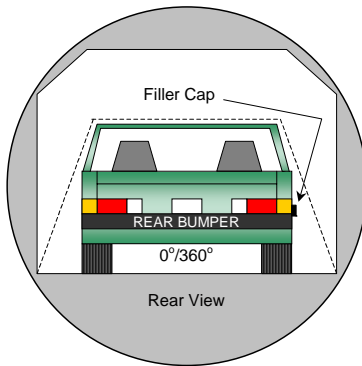
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

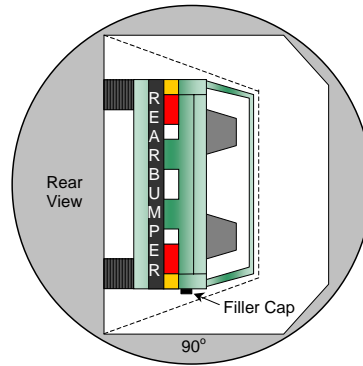
NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

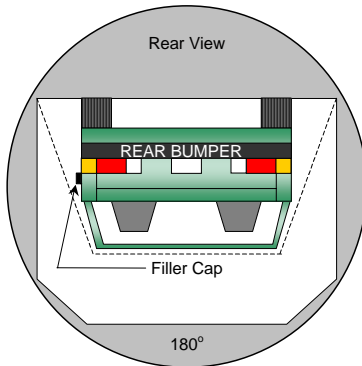
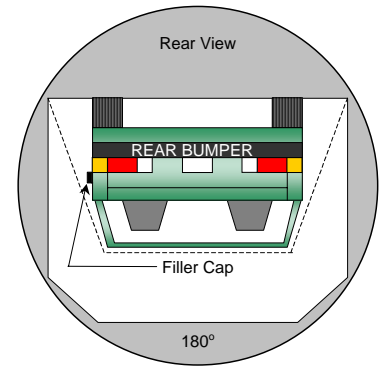
Test Date: 11/06/07



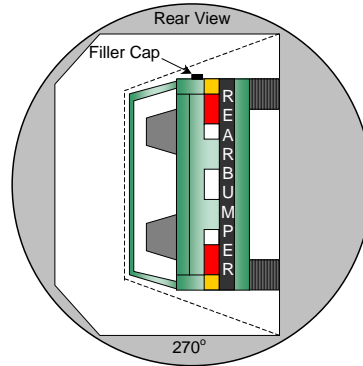
0° to 90°



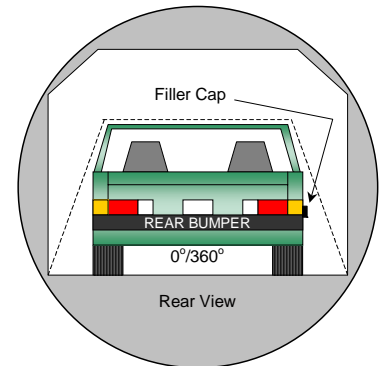
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. No solvent leakage occurred during rollover.

DATA SHEET NO. 12...(CONTINUED)

FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	84	309	393
90° to 180°	81	310	391
180° to 270°	79	336	415
270° to 360°	82	305	387

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5.0
Sixth Minute	1.0
Seventh Minute	1.0
Eighth Minute	1.0

ACTUAL TEST VEHICLE SOLVENT SPILLAGE TABLE (oz.)

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

SOLVENT SPILLAGE LOCATION TABLE

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

*Spillage amount was immeasurable

DATA SHEET NO. 13

VEHICLE MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	5233	4713	-520
2	RSOV to front of engine	mm	4563	4583	20
3	RSOV to firewall centerline	mm	4129	4053	-76
4	RSOV to leading edge of right door	mm	3836	3815	-21
5	RSOV to leading edge of left door	mm	3834	3830	-4
6	RSOV to lower leading edge of right door	mm	3719	3755	36
7	RSOV to lower leading edge of left door	mm	3711	3714	3
8	RSOV to upper trailing edge of right door	mm	2724	2733	9
9	RSOV to upper trailing edge of left door	mm	2720	2717	-3
10	RSOV to lower trailing edge of right door	mm	2677	2713	36
11	RSOV to lower trailing edge of left door	mm	2673	2670	-3
12	RSOV to bottom of right 'A' pillar	mm	3793	3790	-3
13	RSOV to bottom of left 'A' pillar	mm	3798	3796	-2
14	RSOV to firewall on right side	mm	4133	4108	-25
15	RSOV to firewall on left side	mm	4159	4148	-11
16	RSOV to steering column	mm	3360	3350	-10
17	Center of steering column to left 'A' pillar	mm	410	390	-20
18	Center of steering column to headlining	mm	440	430	-10
19	RSOV to right side of front bumper	mm	5125	4718	-407
20	RSOV to left side of front bumper	mm	5125	4699	-426
21	Length of engine block	mm	470	470	0
RD	RSOV to right side of dash panel	mm	3570	3575	5
CD	RSOV to center of dash panel	mm	3515	3539	24
LD	RSOV to left side of dash panel	mm	3566	3566	0

DATA SHEET NO. 13...(CONTINUED)

VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	5233	4713	-520
2	Total width	mm	1770	1777	7
3	Bumper top height	mm	695	760	65
4	Bumper bottom height	mm	290	260	-30
5	Longitudinal member top height	mm	550	636	86
6	Longitudinal member bottom height	mm	419	491	72
7	Distance between longitudinal members	mm	790	1010	220
8	Longitudinal member width	mm	70	70	0
9	Engine top height	mm	1125	1110	-15
10	Engine bottom height	mm	249	221	-28
11	Engine and gear box width	mm	590	590	0
12	Front bumper to engine distance	mm	670	260	-410
13	Front shock absorber fixing width	mm	870	745	-125
14	Bonnet leading edge height	mm	1020	1085	65
15	Front shock absorber fixing width	mm	1190	1375	185
16	Front bumper to front axle distance	mm	815	354	-461
17	Front axle to 'A' pillar distance	mm	610	525	-85
18	'A' pillar to 'B' pillar distance	mm	1117	1016	-101
19	'B' pillar to rear axle distance	mm	1480	1520	40
20	'B' pillar to 'C' pillar distance	mm	580	585	5
21	Roof sill bottom height	mm	1570	1569	-1
22	Roof sill top height	mm	1630	1629	-1
23	Floor sill bottom height	mm	330	316	-14
24	Floor sill top height	mm	530	470	-60

DATA SHEET NO. 13...(CONTINUED)

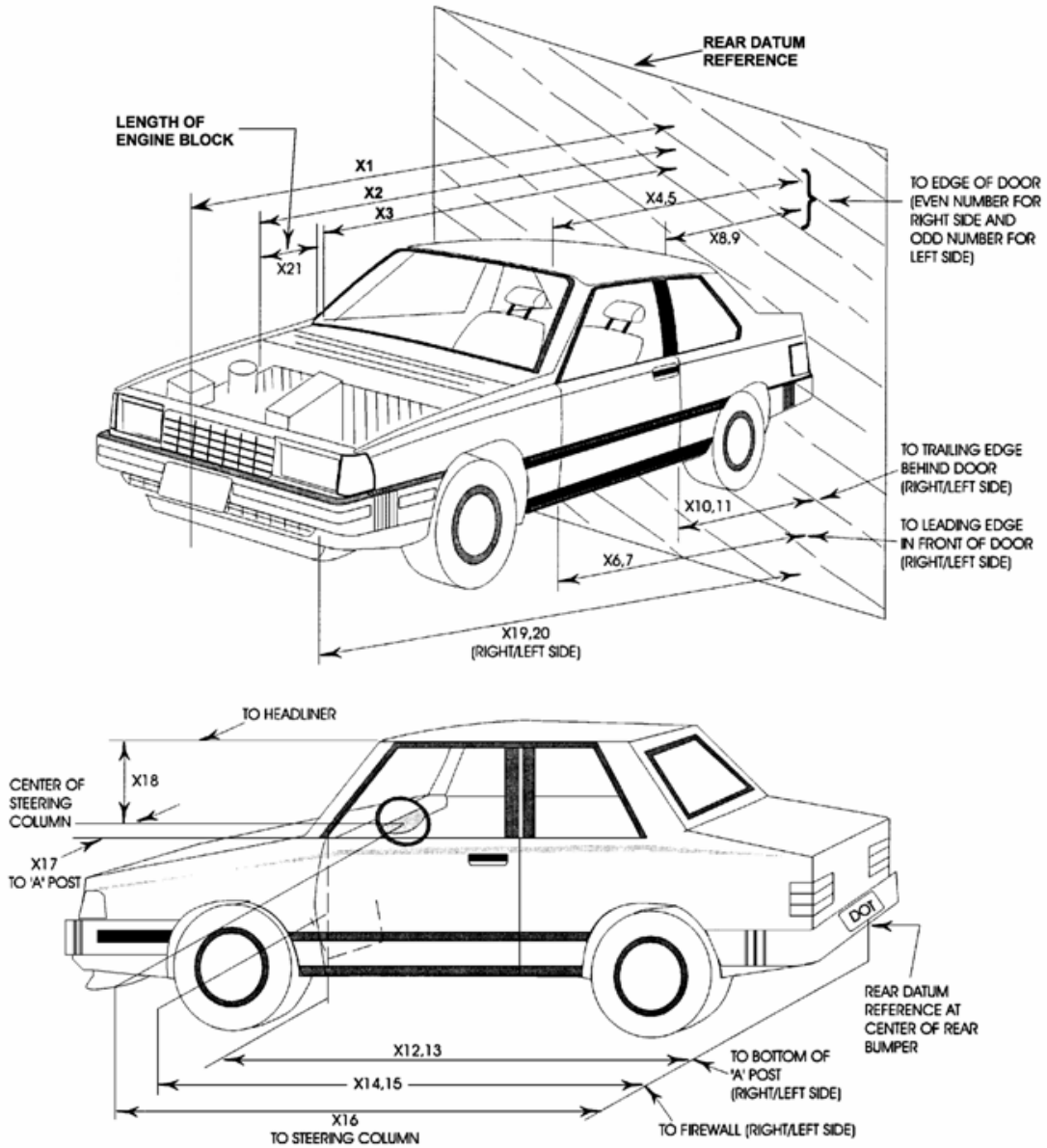
VEHICLE MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07



DATA SHEET NO. 14

CAMERA LOCATIONS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location (mm)			Angle (deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-11412	-8150	-1484	0			30
2	Overall Left Side	-2157	-7845	-1009	0	8501	20mm	1000
3	Closeup Left Side	-1489	-6621	-1225	0	7427	50mm	1000
4	Driver and Interior View	-6696	-5987	-1071	-17	8126	ZOOM	1000
5	Steering Column (Bottom)	-1972	-8184	-2879	-13	9477	35mm	1000
6	Steering Column (Top)	-1966	-8141	-3258	-13	9610	35mm	1000
7	Overall Right Side	-2513	-7014	-1012	0	7711	20mm	1000
8	Closeup Right Side	-1582	6523	1235	0	6192	50mm	1000
9	Passenger and Interior View	-5136	9516	-2460	-10	10306	ZOOM	1000
10	Right Side View	-1582	7995	-1713	-6	8201	ZOOM	1000
11	Windshield View	-354	0	-5749	-90		24mm	1000
12	Driver Front View	363	-543	-2548	-34		25mm	1000
13	Passenger Front View	381	445	-2548	-34		25mm	1000
14	Pit View of Engine	-756	0	1495	90		12mm	1000
15	Pit View of Fuel Tank	-3398	0	1495	90		8mm	1000
16	Real Time Driver	-1926	-8089	-1704	-1			30
17	Real Time Passenger	-1433	8047	-1704	-1			30
18	Driver Side Dummy On-Board	-2655	209	-2009	-1			30
19	Passenger Side Dummy On-Board	-2655	-209	-2010	-1			30

All measurements are made relative to the point of impact.

DATA SHEET NO. 15

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

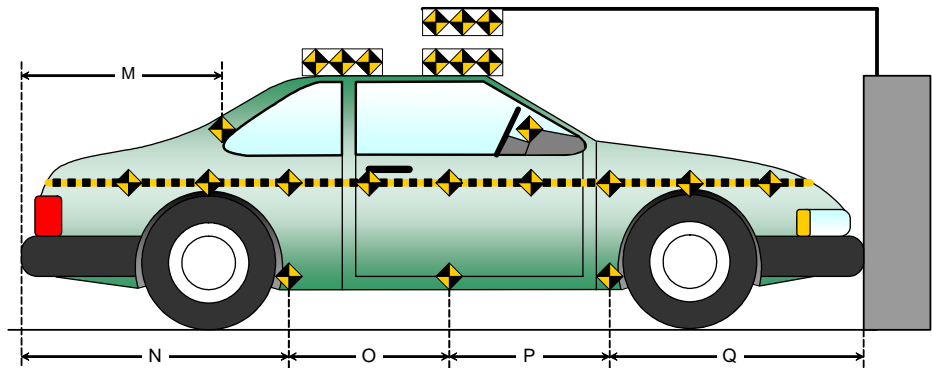
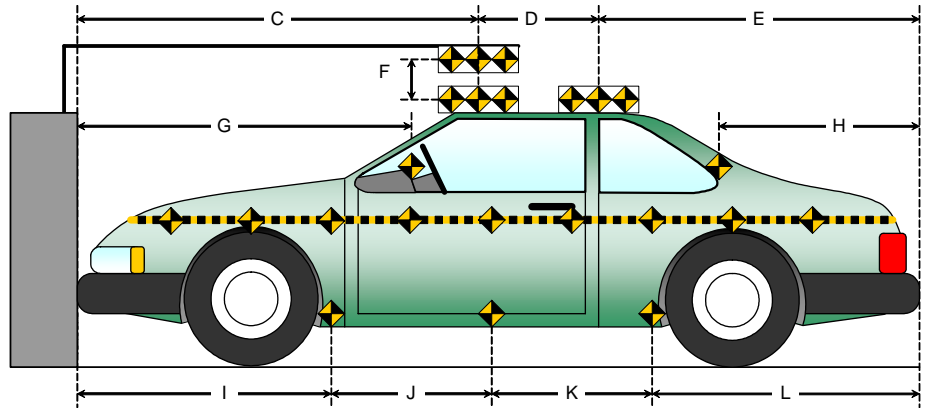
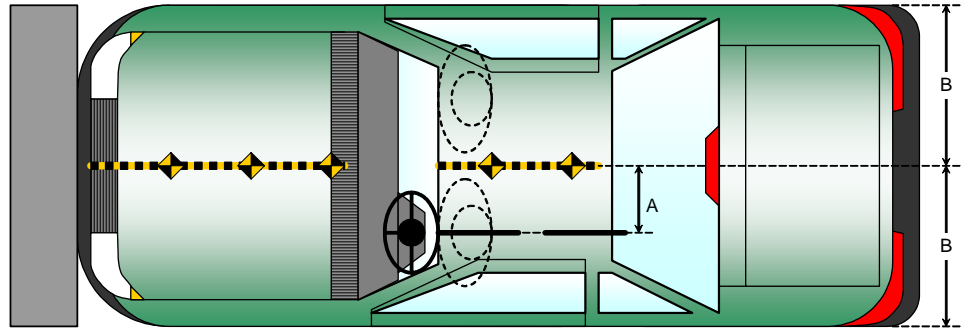
Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

All Dimensions in (mm)	
Item	Value
A	417
B	885
C	2151
D	615
E	2467
F	155
G	1685
H	2194
I	1368
J	1066
K	1066
L	1754
M	2194
N	1754
O	1066
P	1066
Q	1368



DATA SHEET NO. 16

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

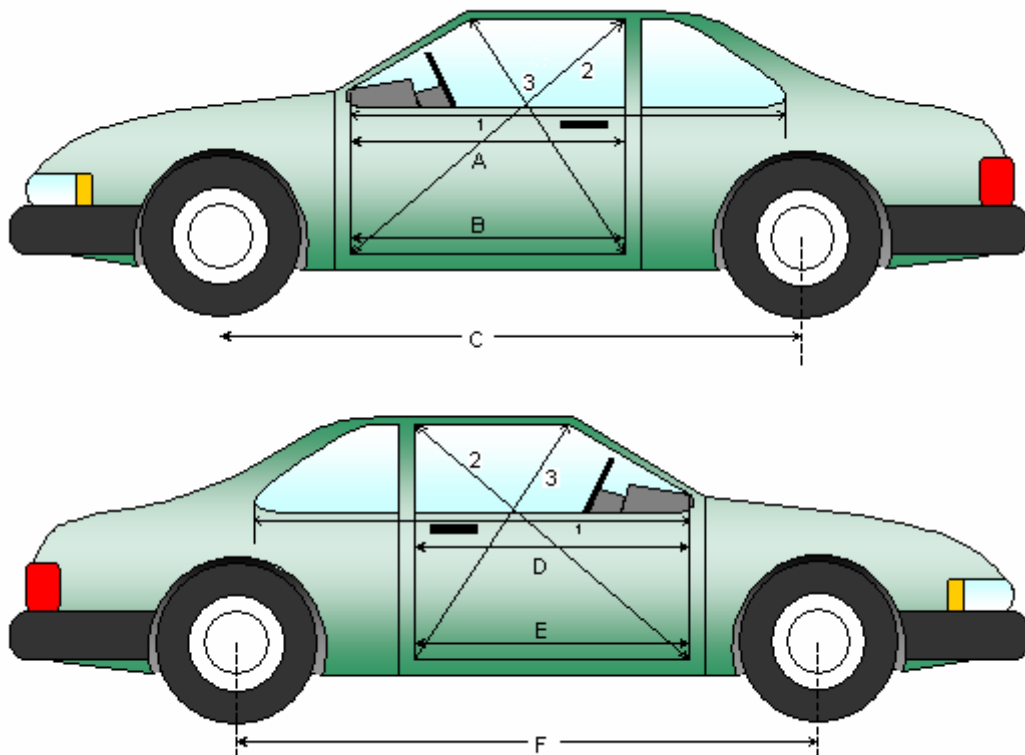
Test Date: 11/06/07

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
1L	Left Side	mm	1021	1016	-5
2L	Left Side (Diagonally)	mm	1416	1396	-20
3L	Left Side (Diagonally)	mm	1101	1111	10
1R	Right Side	mm	1021	1016	-5
2R	Right Side (Diagonally)	mm	1427	1421	-6
3R	Right Side (Diagonally)	mm	1088	1096	8

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	3850	3420	-430
F	Right Side Wheel Base	mm	3850	3550	-300



DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

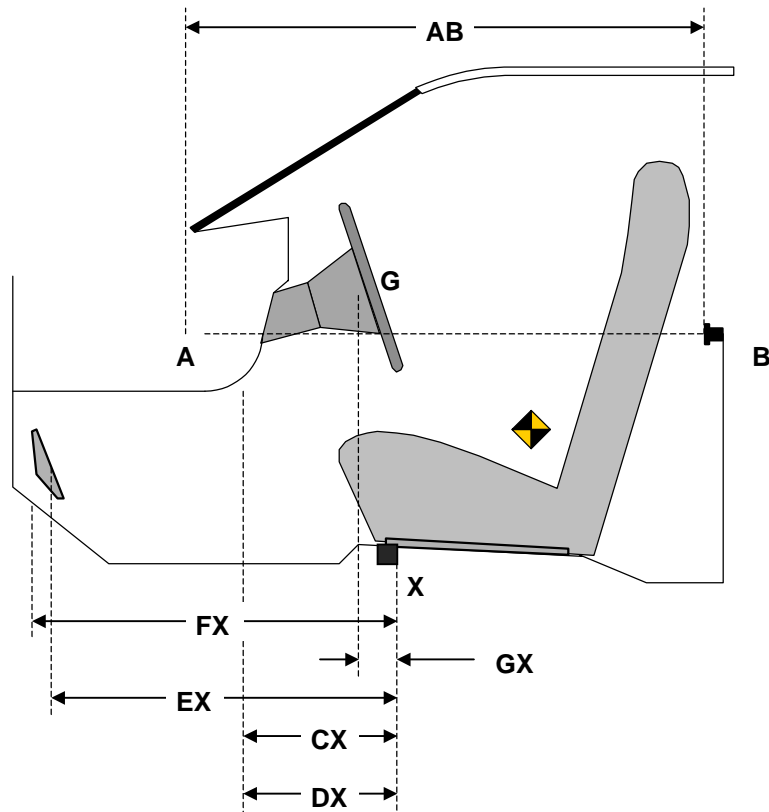
NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	1021	1016	-5
CX	Left Knee Bolster to X	mm	230	245	15
DX	Right Knee Bolster to X	mm	230	250	20
EX	Brake Pedal to X	mm	485	468	-17
FX	Foot Rest to X	mm	470	486	16
GX	Center of Steering Wheel Hub to X	mm	35	60	25



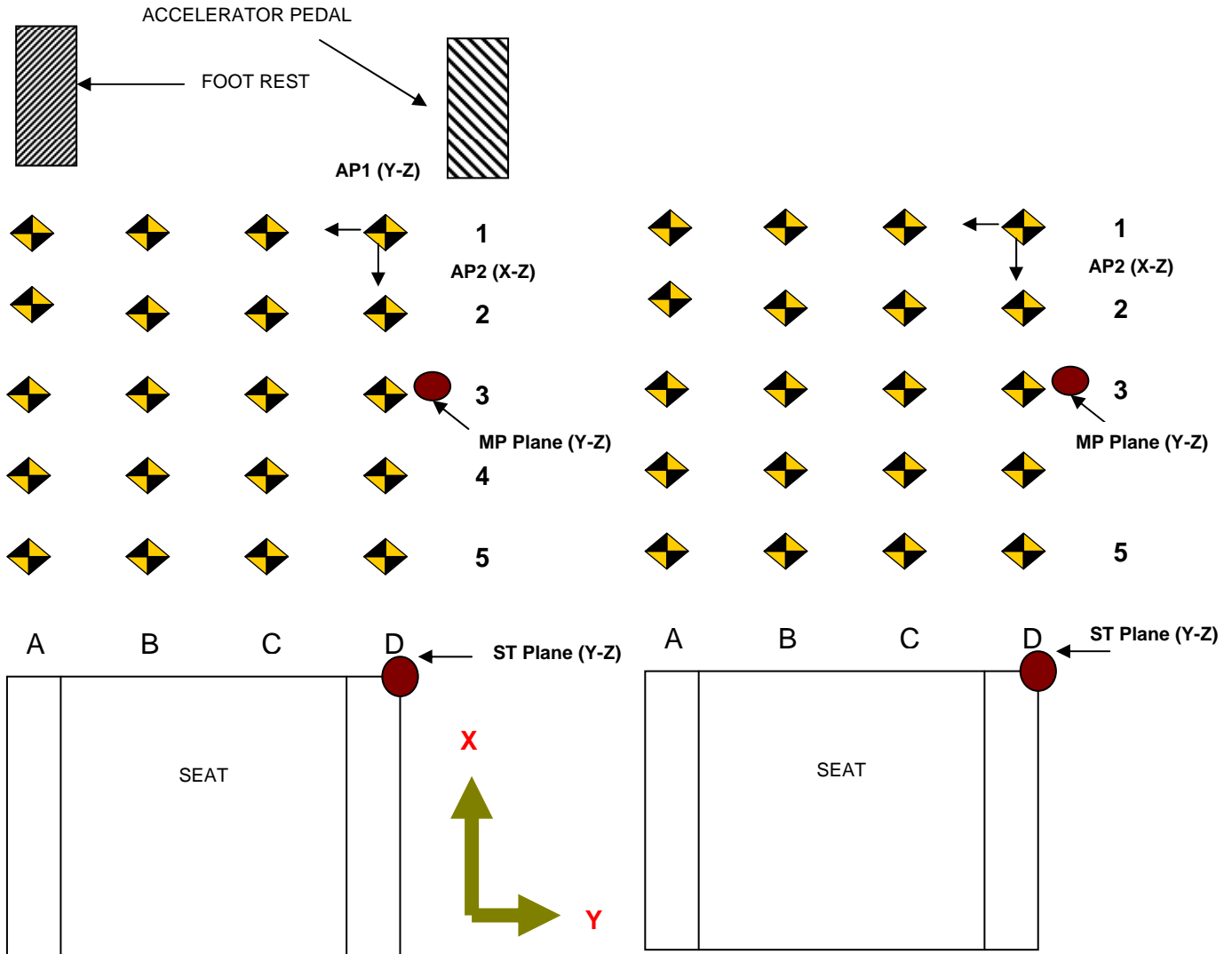
DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07



- AP1: Y-Z Plane passing through D1
- AP2: X-Z Plane passing through D1
- AP3: X-Y plane passing through D1
- MP: Y-Z plane, halfway between the ST plane and AP1 plane
- CF Plane: X-Z plane passes through center of footrest.
- BP Plane: X-Z plane passes through center of brake pedal
- TP Plane: Y-Z plane, intersection of BP Plane and the intersection of the toe pan and floorboard
- Column A: intersection of vehicle and CF plane
- Column D: Intersection of vehicle and AP2 plane
- Row 1: intersection of the vehicle and the AP3 Plane
- Row 3: intersection of the vehicle and TP plane
- Row 5: intersection of the vehicle and MP plane
- Row 2: evenly spaced between row 1 and 3
- Row 4: evenly spaced between row 3 and 5

DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

All measurements in mm

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	575	617	622	619	562	594	545	563	-13	-23	-77	-56
2	513	523	525	529	519	509	494	482	6	-14	-31	-47
3	427	427	432	428	430	428	427	422	3	1	-5	-6
4	306	307	311	310	312	308	308	299	6	1	-3	-11
5	181	188	186	186	186	185	182	176	5	-3	-4	-10

DRIVER FLOOR PAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-45	92	210	357	-15	117	220	363	30	25	10	6
2	-44	94	215	359	-25	114	224	360	19	20	9	1
3	-40	92	217	361	-26	105	231	376	14	13	14	15
4	-39	93	223	358	-28	103	233	368	11	10	10	10
5	-31	105	232	371	-26	111	238	379	5	6	6	8

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-44	26	26	14	-61	-3	-37	-16	-17	-29	-63	-30
2	9	62	74	61	-7	39	57	33	-16	-23	-17	-28
3	73	64	83	80	64	53	69	64	-9	-11	-14	-16
4	72	62	71	56	62	53	62	43	-10	-9	-9	-13
5	70	63	70	55	65	60	65	42	-5	-3	-5	-13

DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

All measurements in mm

	A	B	C	D	A	B	C	D	A	B	C	D
1	626	632	637	626	630	624	635	624	4	-8	-2	-2
2	536	539	542	542	545	536	542	542	9	-3	0	0
3	438	439	441	441	468	455	449	439	30	16	8	-2
4	308	316	318	318	338	334	326	318	30	18	8	0
5	193	194	197	197	223	216	206	201	30	22	9	4

PASSENGER FLOOR PAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-407	-276	-157	2	-372	-243	-124	34	35	33	33	32
2	-420	-279	-147	8	-386	-246	-117	36	34	33	30	28
3	-416	-281	-145	9	-385	-254	-120	34	31	27	25	25
4	-408	-279	-147	8	-388	-261	-130	27	20	18	17	19
5	-410	-276	-148	5	-399	-266	-139	16	11	10	9	11

PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	8	21	30	42	-20	-21	-2	10	-28	-42	-32	-32
2	42	73	72	86	25	35	36	57	-17	-38	-36	-29
3	42	90	75	99	19	63	47	69	-23	-27	-28	-30
4	46	81	73	93	26	59	50	60	-20	-22	-23	-33
5	57	80	75	90	40	62	59	65	-17	-18	-16	-25

DATA SHEET NO. 17

FIXED BARRIER LOAD CELL LOCATIONS

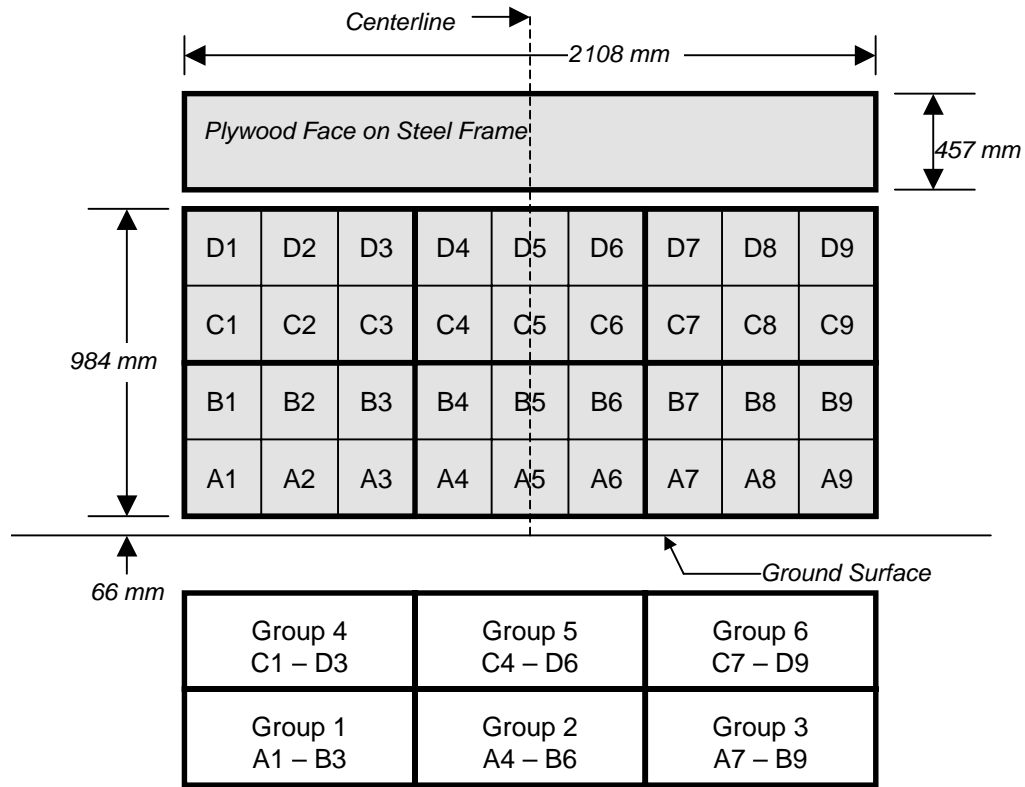
Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

**36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier**



6 Groups of 6 Load Cells Each

DATA SHEET NO. 18

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

VEHICLE INFORMATION

VIN: 1N6AD06W18C402072

Wheel base (mm): 3850

Vehicle Size Category: 2-Door Truck

Test Weight (kg): 2275

ACCELEROMETER DATA

Accelerometer Location: Left rear cross member

Cal. Procedure/Interval: 6 months / drop test

Integration Algorithm: NHTSA Standard

Linearity: Good

Impact Velocity (km/h): 55.88

Velocity Change (km/h): 62.0

Time of Separation (msec): 67.3

CRUSH PROFILE

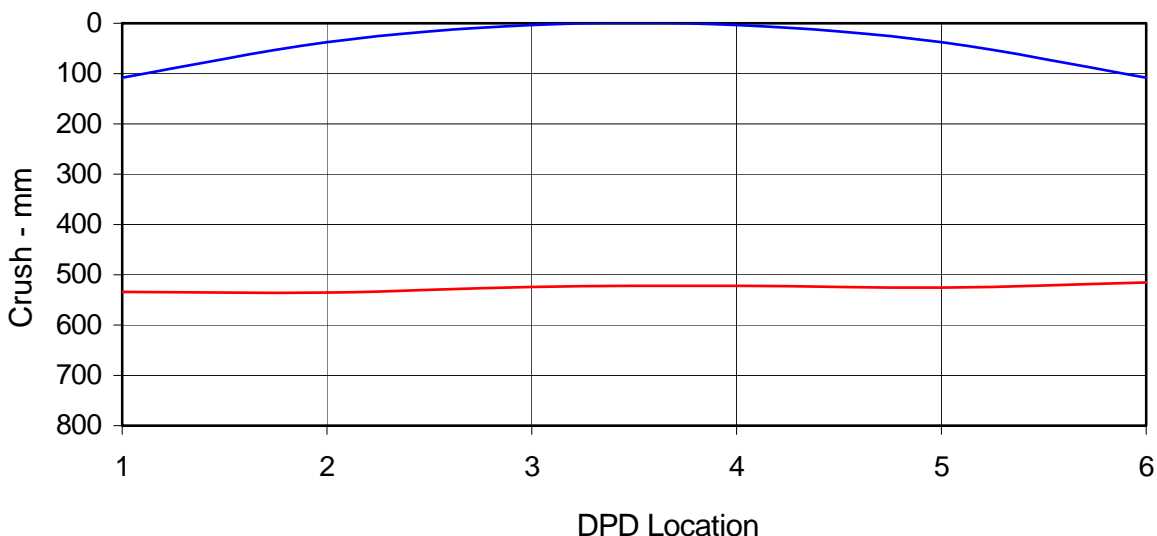
Collision Deformation Classification: 12FDEW6

Midpoint of Damage: Vehicle Centerline

Damage Region Length (mm): 1382

Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	108	534	-426
C2	Crush zone 2 on left side	mm	37	535	-498
C3	Crush zone 3 on left side	mm	3	524	-521
C4	Crush zone 4 on right side	mm	3	522	-519
C5	Crush zone 5 on right side	mm	37	525	-488
C6	Crush zone 6 at right side	mm	108	515	-407



DATA SHEET NO. 19

DUMMY/VEHICLE TEMPERATURE STABILIZATION

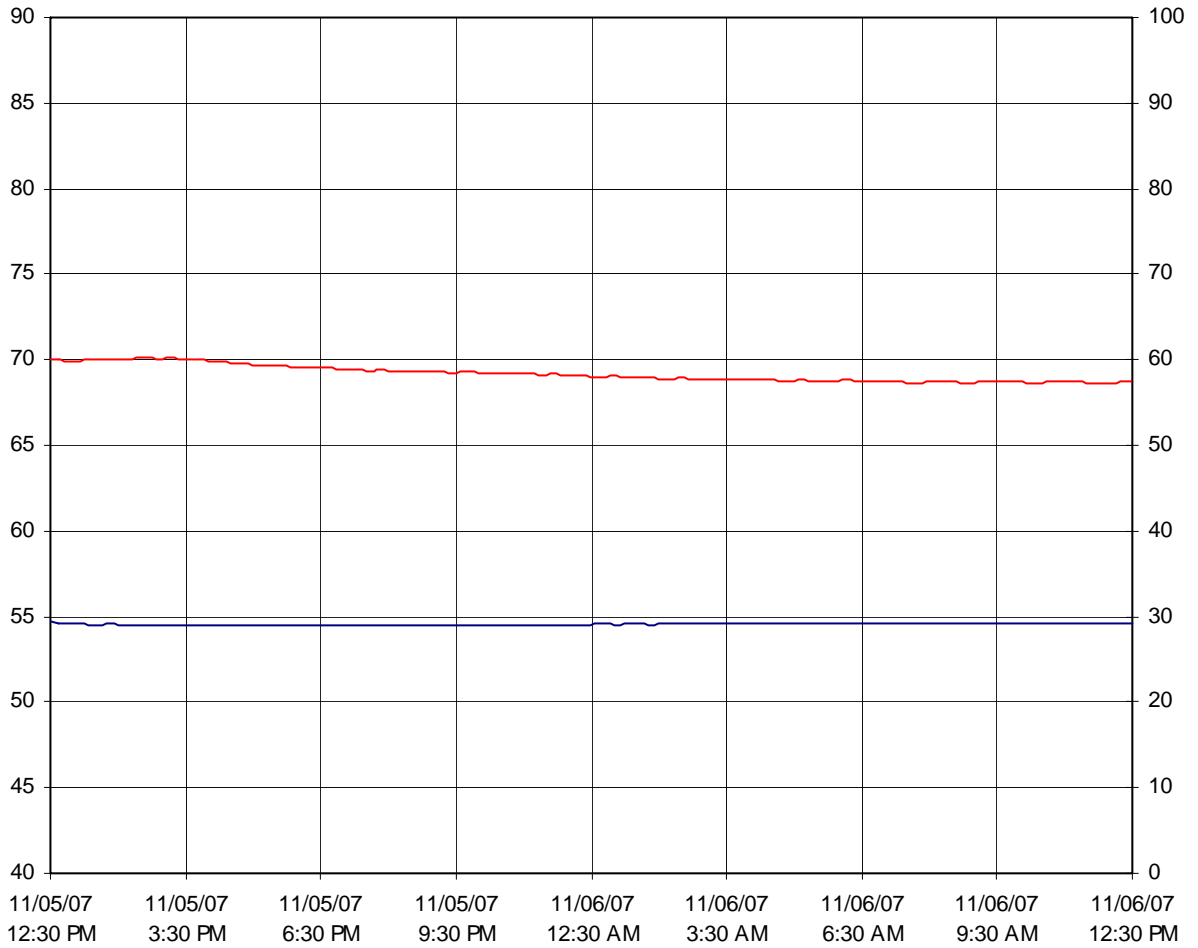
Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck

NHTSA No.: M85206

Test Program: NHTSA 35mph NCAP

Test Date: 11/06/07

— Temperature — Humidity



APPENDIX A
PHOTOGRAPHS

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A-38	Pre-Test Driver Side Knee Bolster	A-38
A-39	Post-Test Driver Side Knee Bolster	A-39
A-40	Pre-Test Driver Side Floor Pan	A-40
A-41	Post-Test Driver Side Floor Pan	A-41
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A-56	Post-Test Passenger Dummy Head	A-56
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A-60	Vehicle on Rollover Device (180°)	A-60
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A-62	Vehicle Impact	A-62

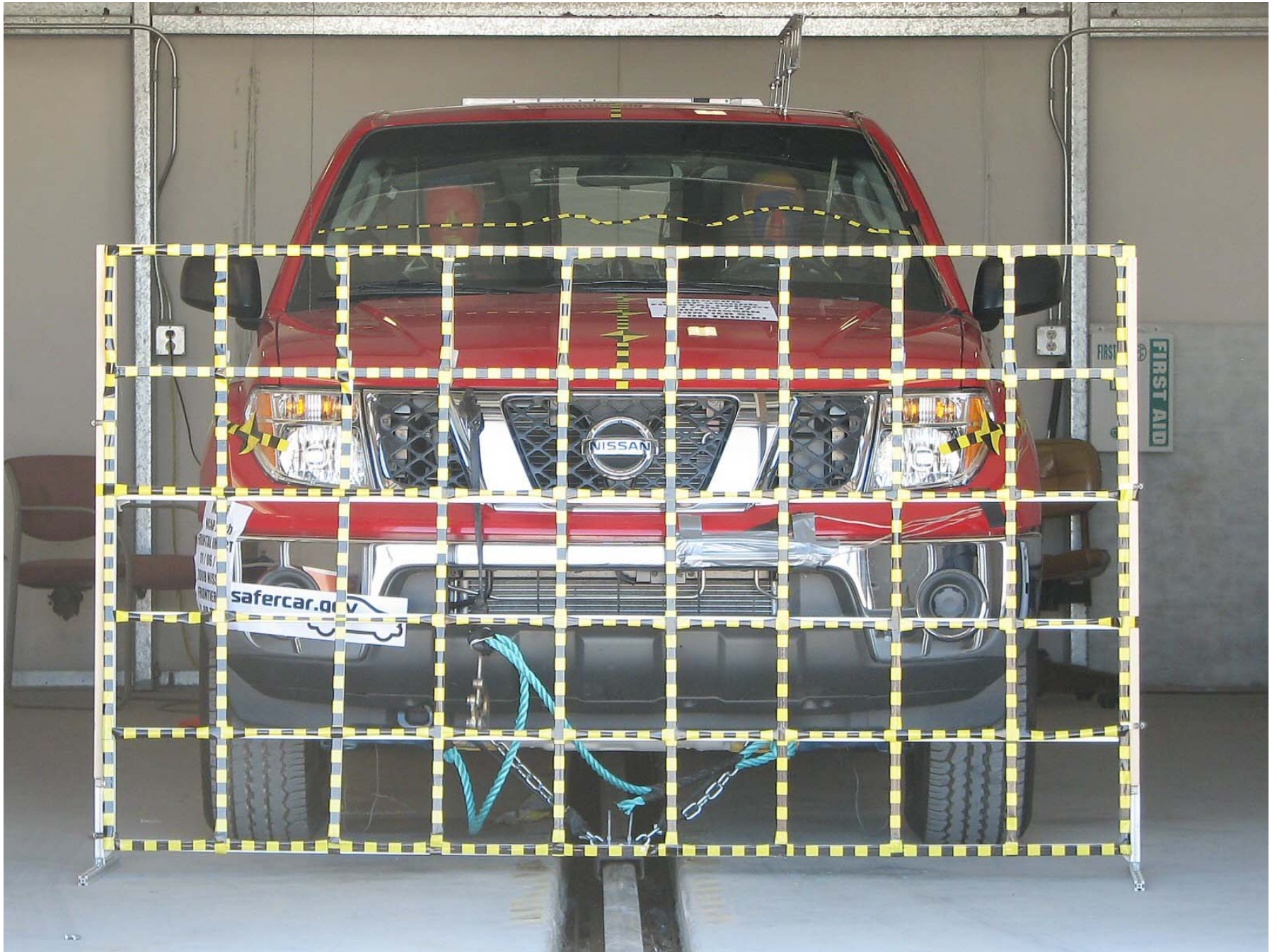


Figure A-1: Load Cell Location

This Space Intentionally Left Blank

MFD BY NISSAN MOTOR CO., LTD.

DATE 08/07

GVWR 5690 LB

GAWR FR. 3296 LB

WITH P265/70R16 TIRES

16X7.0 RIMS AT 35 PSI

COLD SINGLE

GAWR RR. 3331 LB

WITH P265/70R16 TIRES

16X7.0 RIMS AT 35 PSI

COLD SINGLE

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION.

1N6AD06W18C 402072

TRUCK 122

MODEL: BCKNLTN-EUN 0Z000

COLOR	TRIM	TRANS
-------	------	-------

A20	K	RE5R05A
-----	---	---------

AXLE	ENGINE
------	--------

CA31	VO40 3954CC
------	-------------



Figure A-2: Manufacturer's Label



TIRE AND LOADING INFORMATION PNEU ET INFORMATION DE CHARGEMENT

SEATING CAPACITY NOMBRE DE PLACES	TOTAL TOTAL	2	FRONT AVANT	2	REAR ARRIÈRE	0
--------------------------------------	----------------	---	----------------	---	-----------------	---

THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED 1323 lbs OR 600 kg
LE POIDS COMBINÉ D'OCCUPANTS ET DE CARGAISON NE DEVRAIT JAMAIS EXCÉDER 1323 lbs OU 600 kg

TIRE PNEU	ORIGINAL TIRE SIZE TAILLE DU PNEU D'ORIGINE	COLD TIRE PRESSURE PRESSION DE GONFLAGE À FROIDS	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. POUR D'AUTRES DÉTAILS, SE REPORTER AU MANUEL DU CONDUCTEUR.
FRONT AVANT	P265/70R16	240 kPa (35 psi)	
REAR ARRIÈRE	P265/70R16	240 kPa (35 psi)	
SPARE TIRE ROUE DE SECOURS	P265/70R16	240 kPa (35 psi)	

402072 122

Figure A-3: Tire Placard



Figure A-4: Right Front $\frac{3}{4}$ View, As Received



A-5

TR-P28001-09-NC

Figure A-5: Left Rear $\frac{3}{4}$ View, as Received



Figure A-6: Pre-Test Front View



Figure A-7: Post-Test Front View (Vehicle Moved)



Figure A-8: Pre-Test Left Side View



Figure A-9: Post-Test Left Side View



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TR-P28001-09-NC

Figure A-10: Pre-Test Right Side View



Figure A-11: Post-Test Right Side View



Figure A-12: Pre-Test Right Front 3/4 View



Figure A-13: Post-Test Right Front ¾ View (Vehicle Moved)



A-14

TR-P28001-09-NC

Figure A-14: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-15: Post-Test Left Rear ¾ View



Figure A-16: Post-Test Left Side 3/4 View of Doors After Impact



Figure A-17: Post-Test Right Side $\frac{3}{4}$ View of Doors After Impact

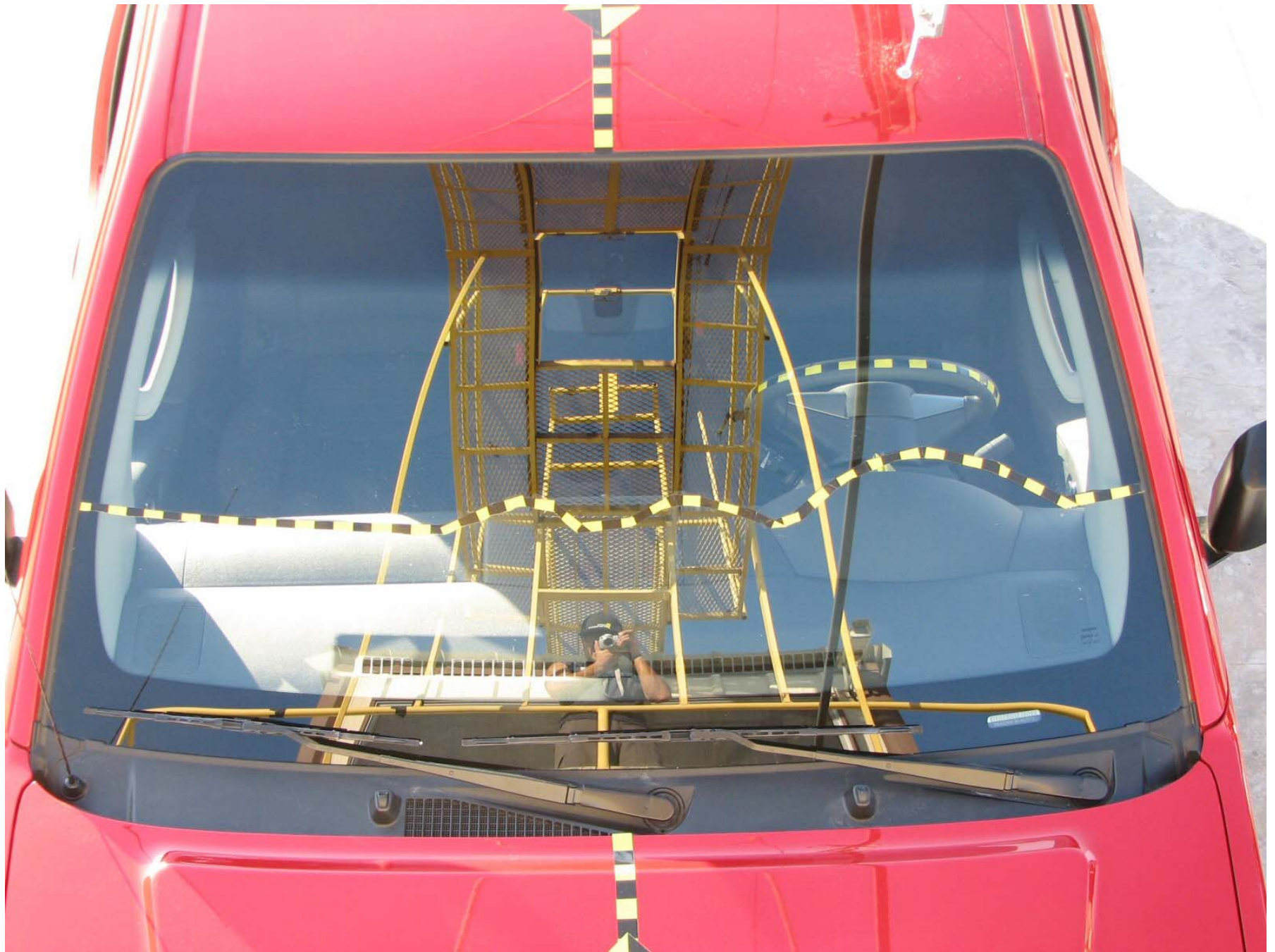


Figure A-18: Pre-Test Windshield



Figure A-19: Post-Test Windshield



Figure A-20: Pre-Test Engine Compartment

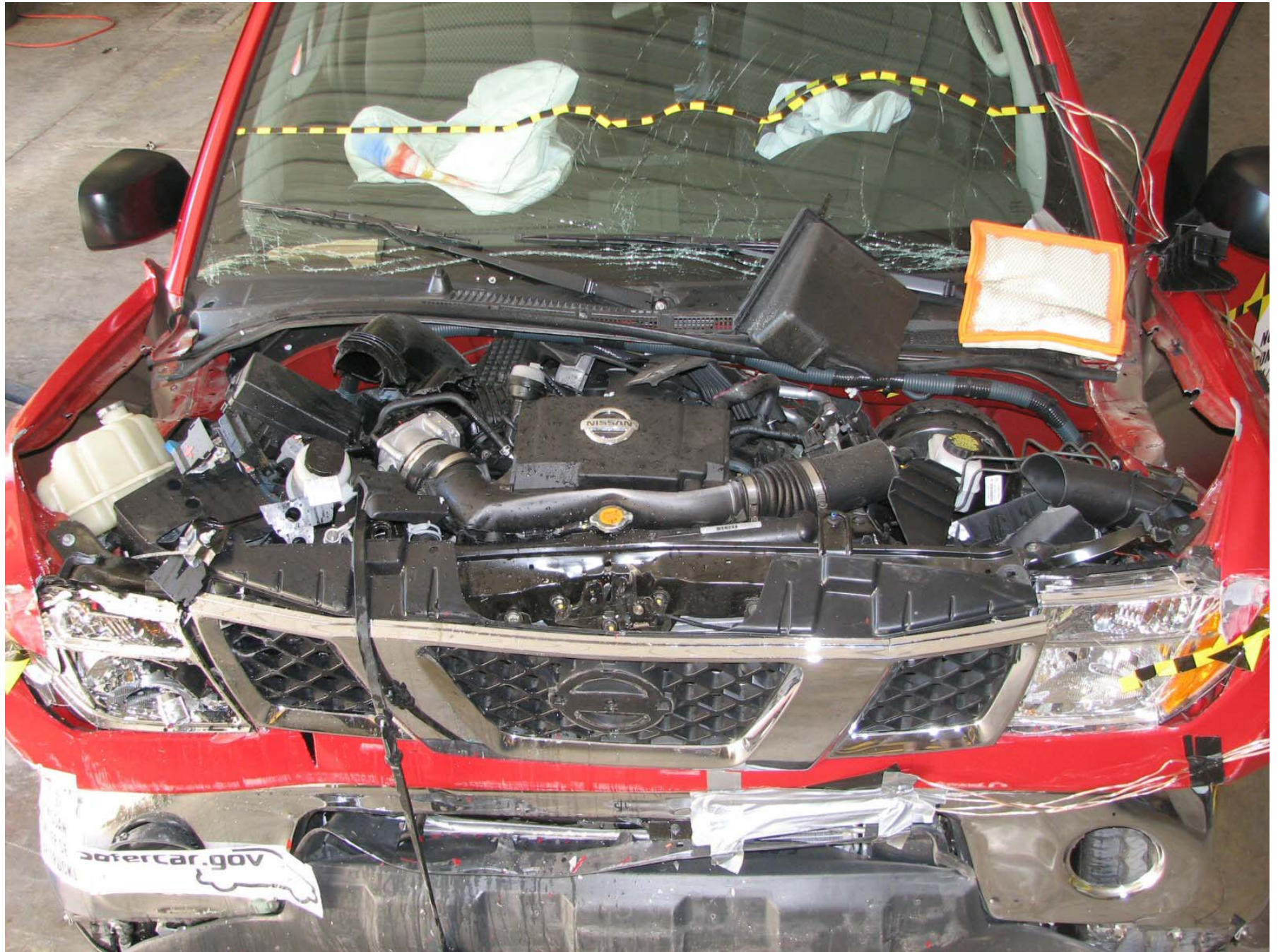


Figure A-21: Post-Test Engine Compartment (Vehicle Moved)



Figure A-22: Pre-Test Fuel Cap



2008 Nissan Frontier SE
M85206
STODDARD SOLVENT ADDED
19.62 GALLONS
(74.16 LITERS)

Figure A-23: Post-Test Fuel Cap



Figure A-24: Pre-Test Front Underbody

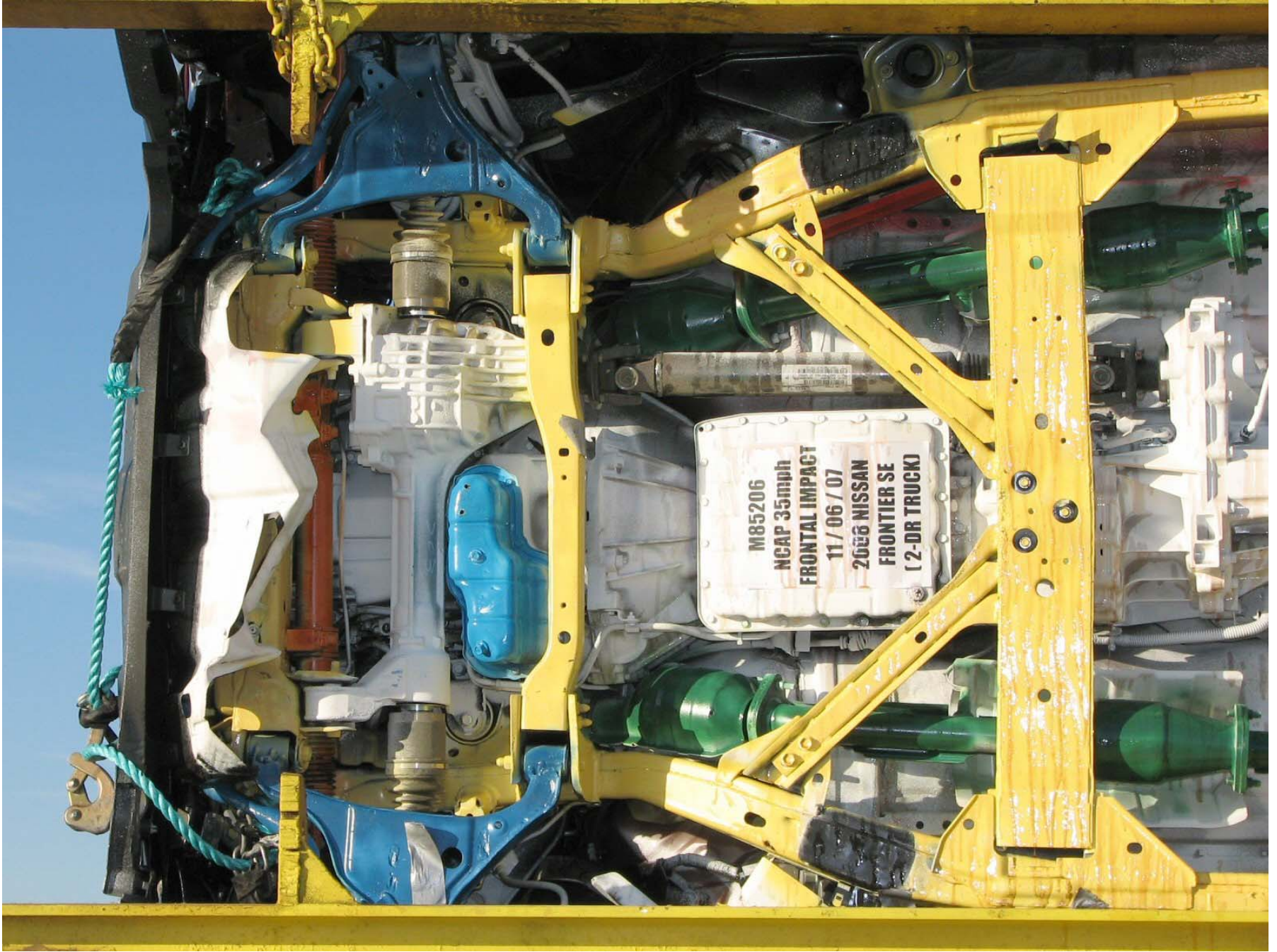


Figure A-25: Post-Test Front Underbody

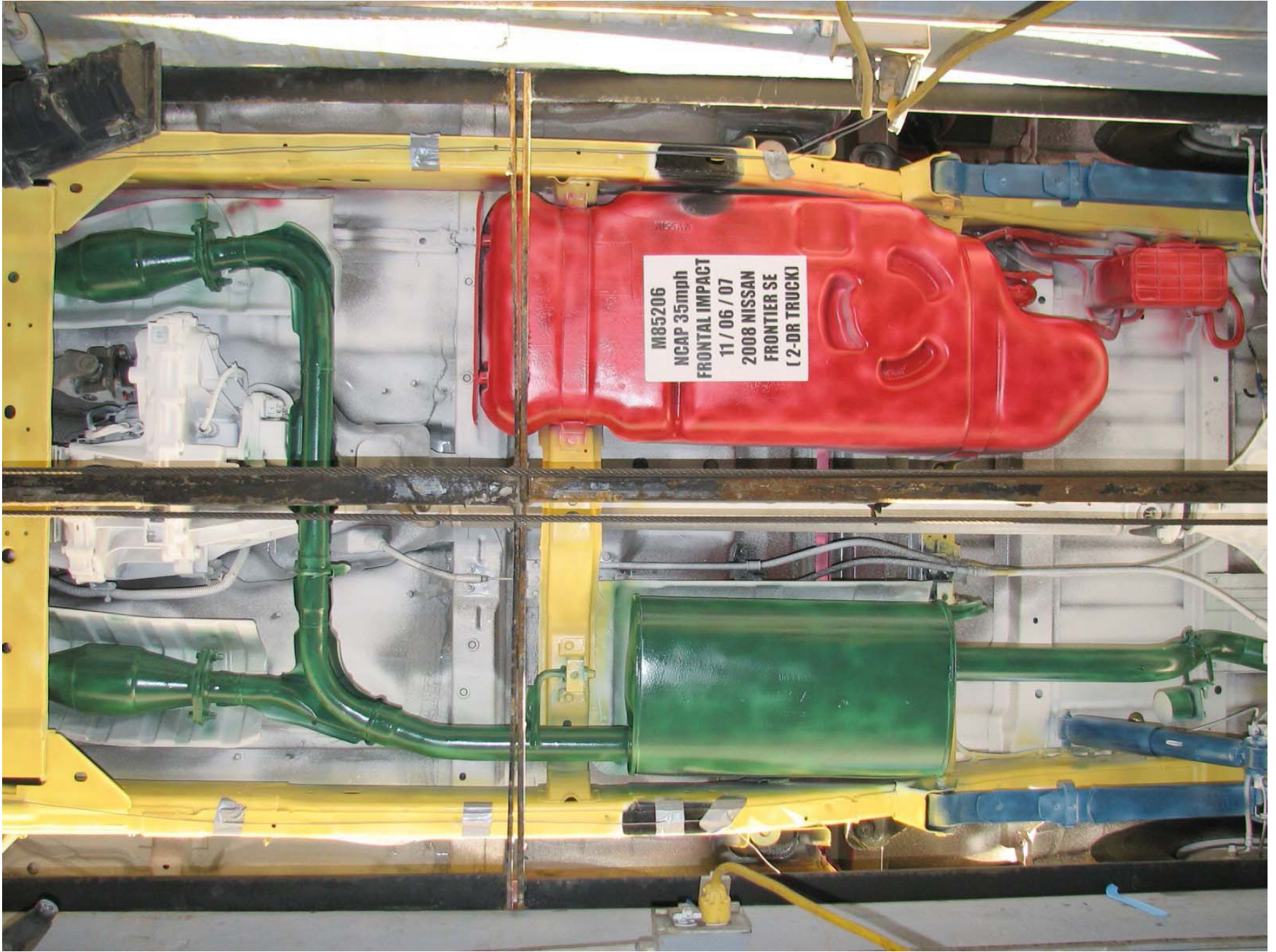


Figure A-26: Pre-Test Mid Underbody

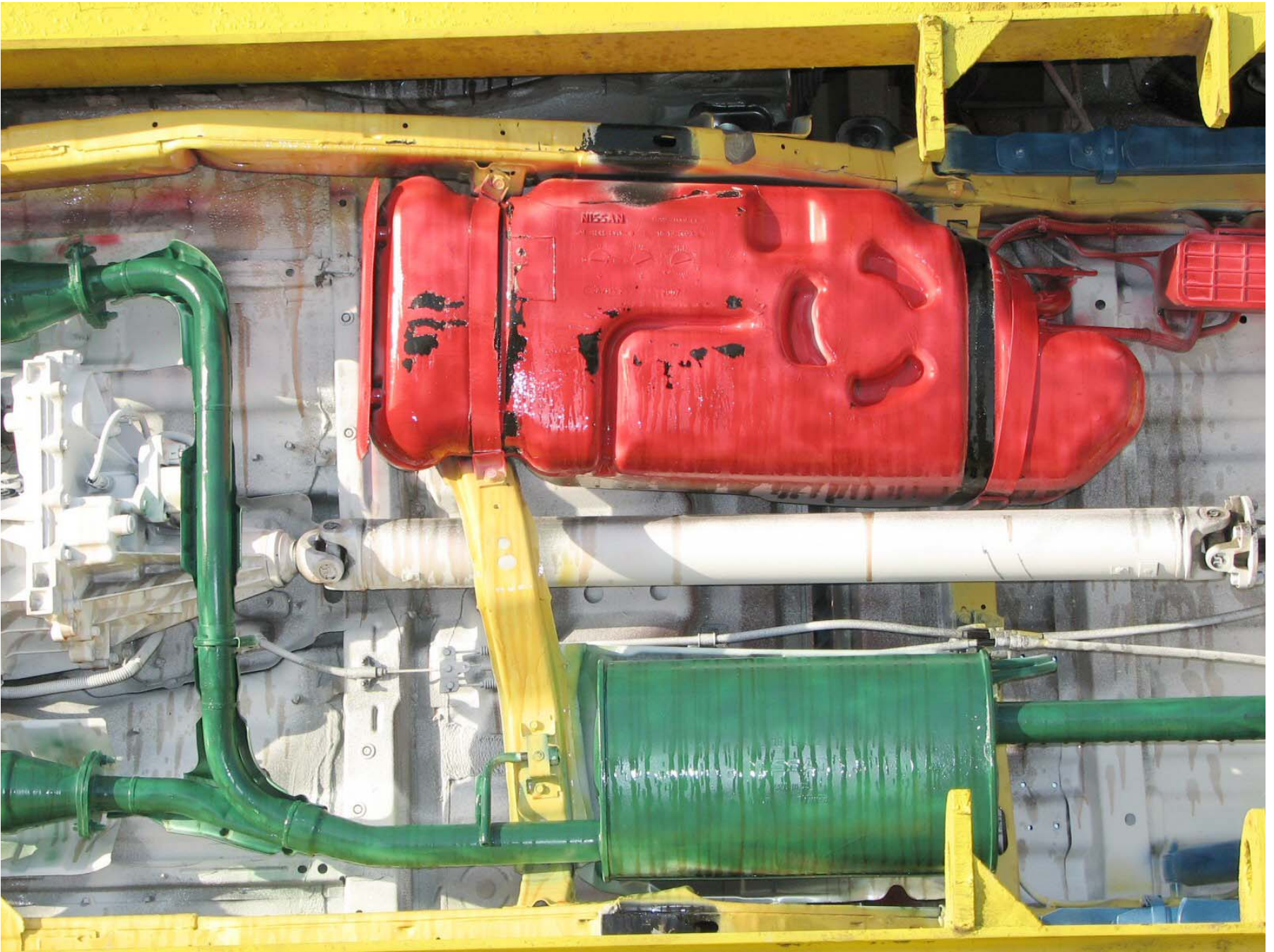


Figure A-27: Post-Test Mid Underbody

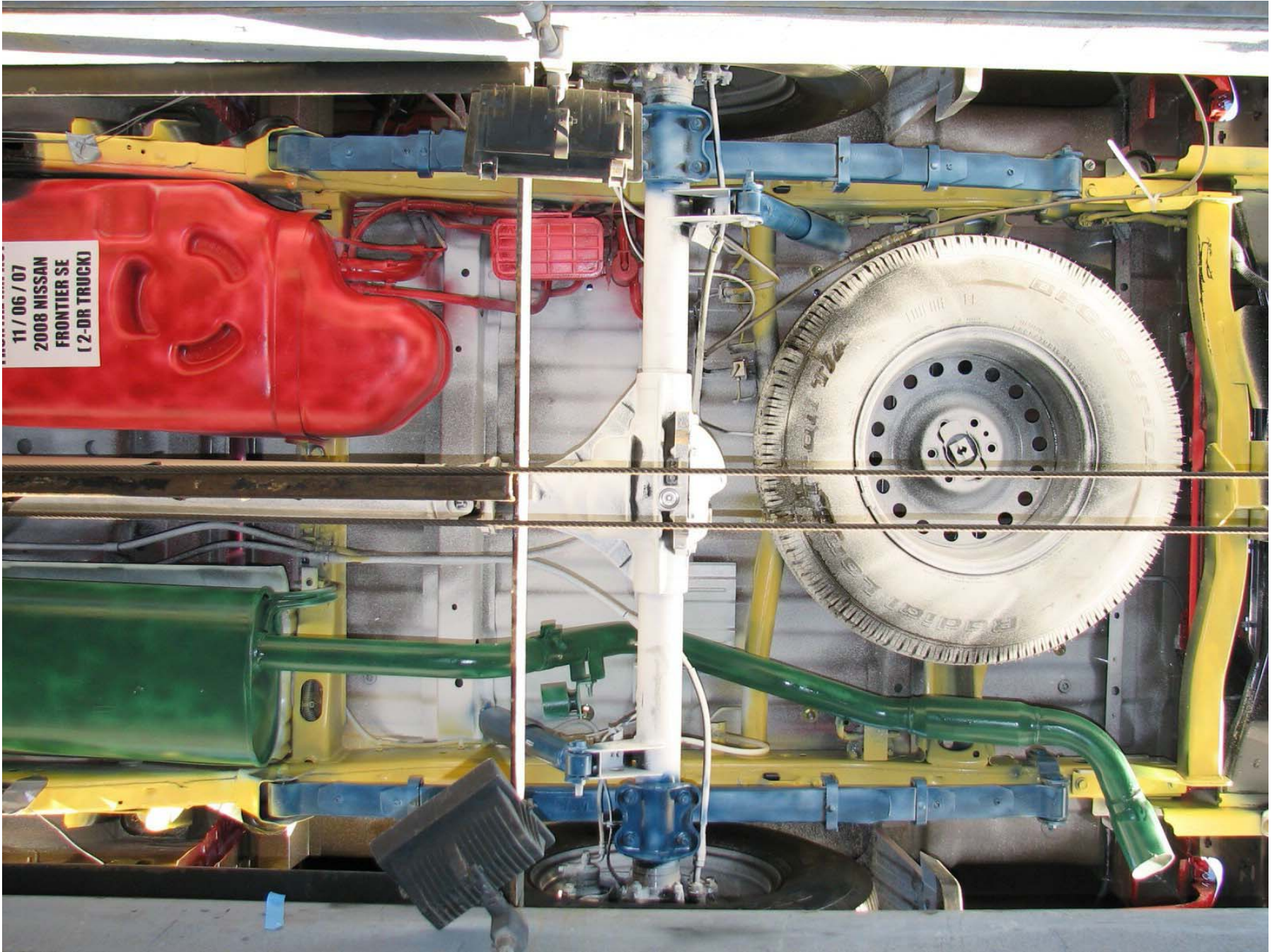


Figure A-28: Pre-Test Rear Underbody

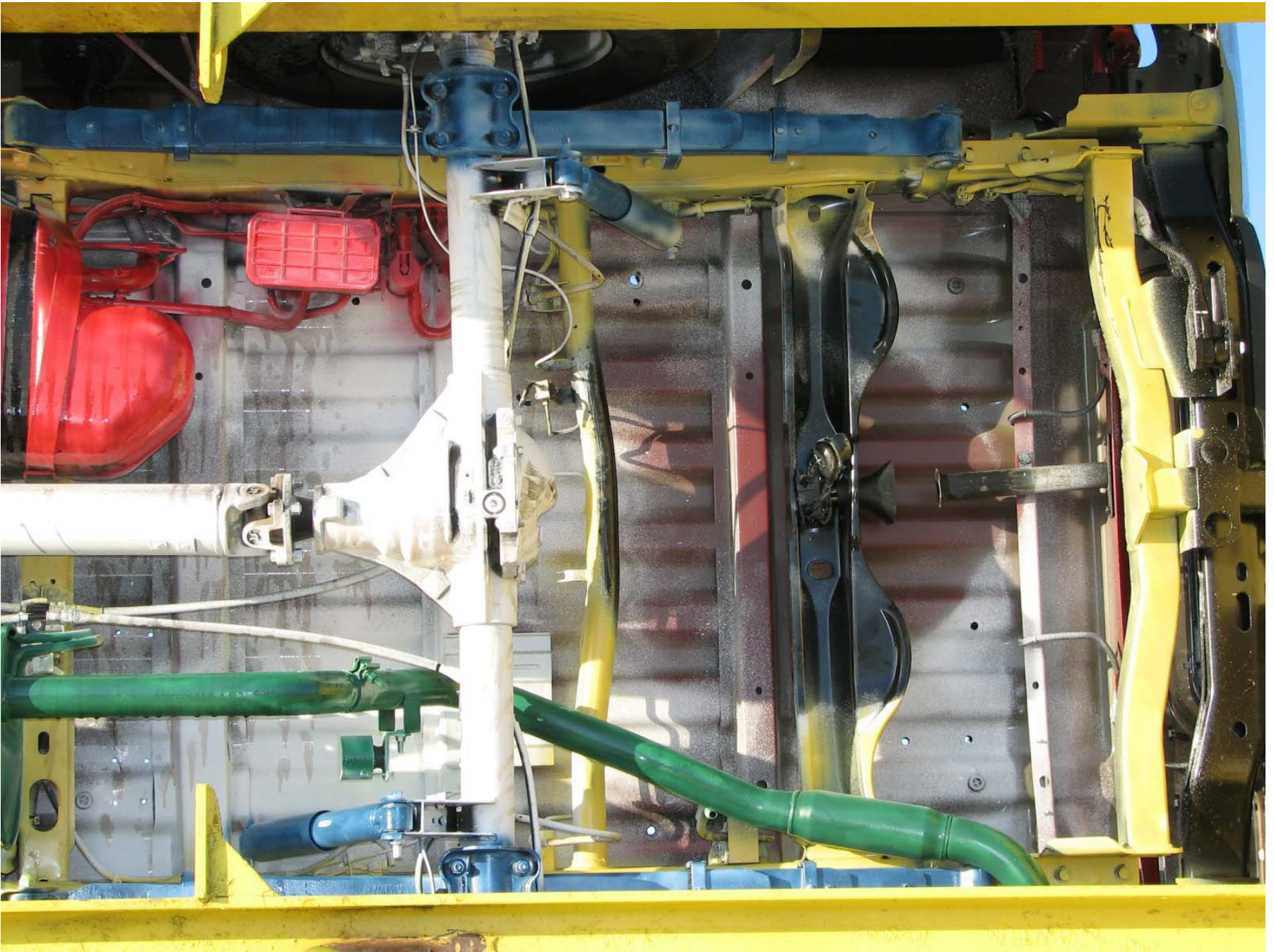


Figure A-29: Post-Test Rear Underbody



Figure A-30: Pre-Test Driver Dummy Front View (Head Position)



Figure A-31: Post-Test Driver Dummy Front View (Head Position)



Figure A-32: Pre-Test Driver Dummy (Through Window)



Figure A-33: Post-Test Driver Dummy (Through Window)



Figure A-34: Pre-Test Driver Dummy (Door Open)



Figure A-35: Post-Test Driver Dummy (Door Open)



Figure A-36: Pre-Test Driver Dummy Feet



Figure A-37: Post-Test Driver Dummy Feet



Figure A-38: Pre-Test Driver Side Knee Bolster



Figure A-39: Post-Test Driver Side Knee Bolster



Figure A-40: Pre-Test Driver Side Floor Pan



Figure A-41: Post-Test Driver Side Floor Pan



Figure A-42: Post-Test Driver Dummy Head



Figure A-43: Post-Test Driver Dummy Airbag Contact



Figure A-44: Pre-Test Passenger Dummy Front View (Head Position)



Figure A-45: Post-Test Passenger Dummy Front View (Head Position)



Figure A-46: Pre-Test Passenger Dummy (Through Window)



Figure A-47: Post-Test Passenger Dummy (Through Window)



Figure A-48: Pre-Test Passenger Dummy (Door Open)



Figure A-49: Post-Test Passenger Dummy (Door Open)



Figure A-50: Pre-Test Passenger Dummy Feet



Figure A-51: Post-Test Passenger Dummy Feet



Figure A-52: Pre-Test Passenger Side Glove Box



Figure A-53: Post-Test Passenger Side Glove Box



Figure A-54: Pre-Test Passenger Side Floor Pan

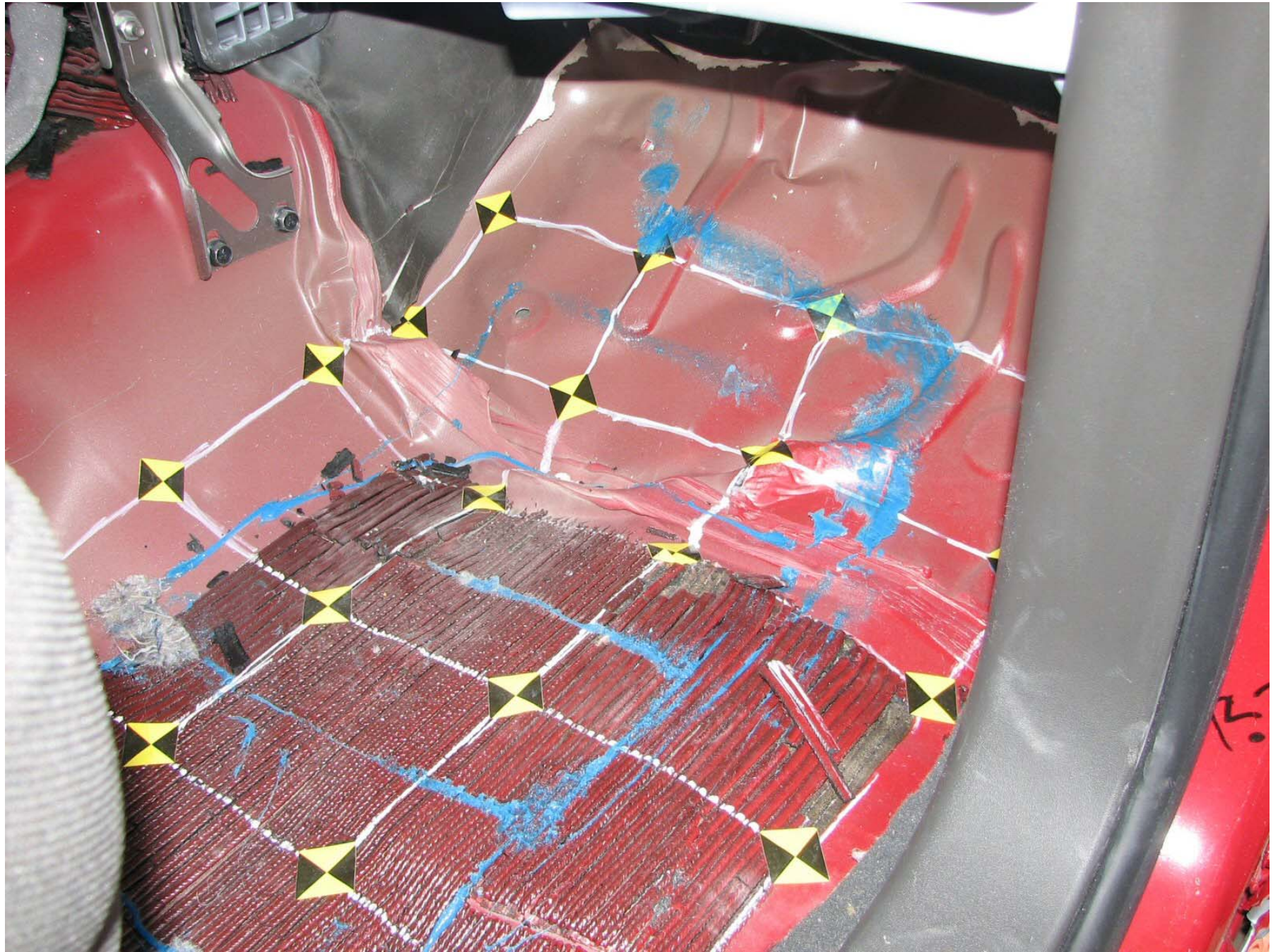


Figure A-55: Post-Test Passenger Side Floor Pan



Figure A-56: Post-Test Passenger Dummy Head



Figure A-57: Post-Test Passenger Dummy Airbag Contact



A-58

TR-P28001-09-NC

Figure A-58: Vehicle on Rollover Device (0°)



Figure A-59: Vehicle on Rollover Device (90°)



Figure A-60: Vehicle on Rollover Device (180°)

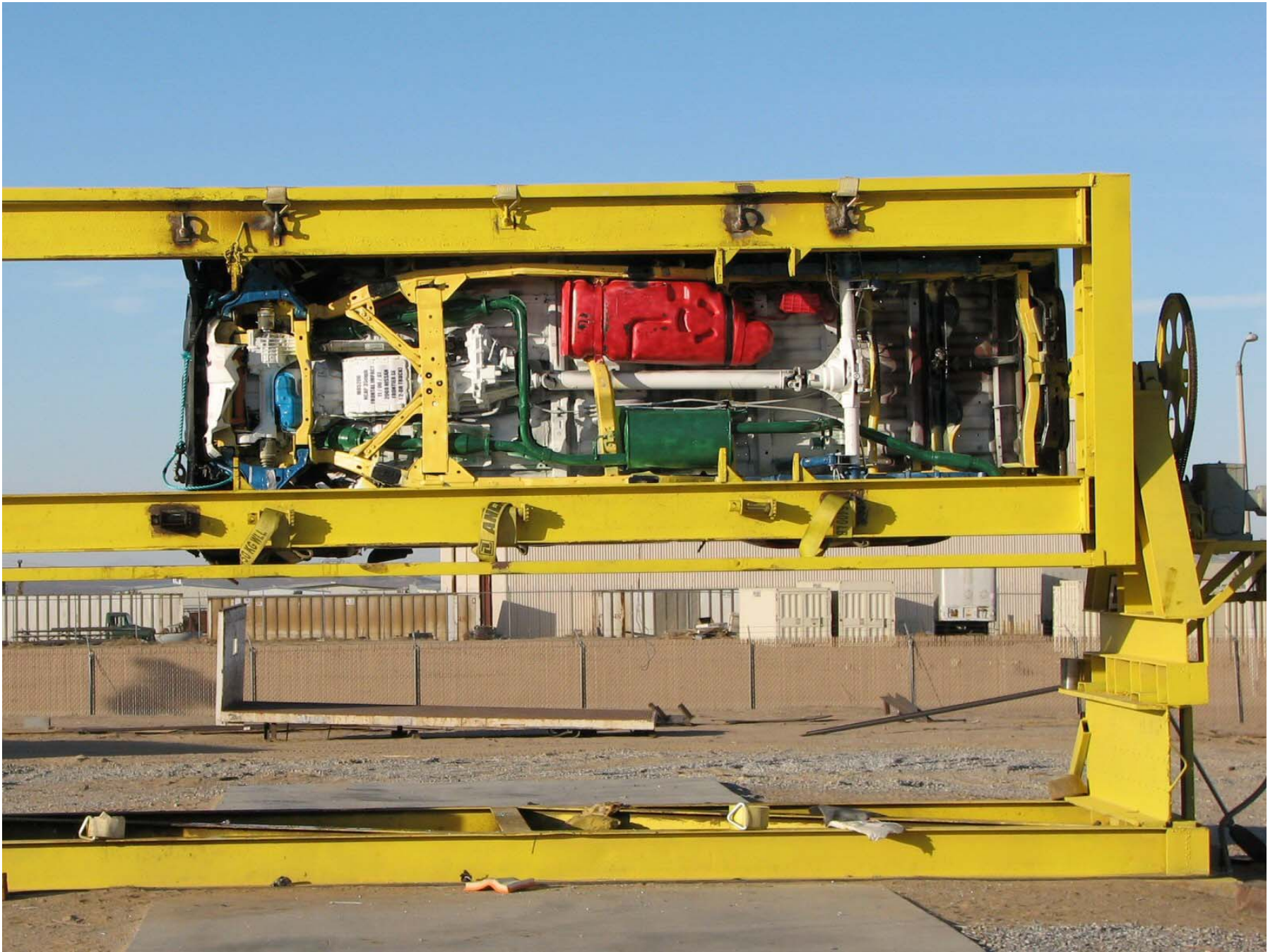


Figure A-61: Vehicle on Rollover Device (270°)

A-61

TR-P28001-09-NC



Figure A-62: Vehicle Impact

APPENDIX B
DATA PLOTS

LIST OF DATA PLOTS

Data Plot	Page	
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	Driver Head Primary Y	B-1
	Driver Head Primary Z	B-1
	Driver Head Resultant Primary	B-1
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	Driver Chest Primary Y	B-2
	Driver Chest Primary Z	B-2
	Driver Chest Resultant Primary	B-2
B-3	Driver Left Femur Force Z	B-3
	Driver Right Femur Force Z	B-3
B-4	Passenger Head Primary X	B-4
	Passenger Head Primary Y	B-4
	Passenger Head Primary Z	B-4
	Passenger Head Resultant Primary	B-4
B-5	Passenger Chest Primary X	B-5
	Passenger Chest Primary Y	B-5
	Passenger Chest Primary Z	B-5
	Passenger Chest Resultant Primary	B-5
B-6	Passenger Left Femur Force Z	B-6
	Passenger Right Femur Force Z	B-6

LIST OF DATA PLOTS...(CONTINUED)

The following additional data plots for this test can be obtained from the research and development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

Driver Head Primary X Velocity
Driver Head Primary X Displacement
Driver Head Redundant X
Driver Head Redundant Y
Driver Head Redundant Z
Driver Head Resultant Redundant
Driver Head Redundant X Velocity
Driver Head Redundant X Displacement
Driver Upper Neck Force X
Driver Upper Neck Force Y
Driver Upper Neck Force Z
Driver Upper Neck Force Resultant
Driver Upper Neck Moment X
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Neck Moment Resultant
Driver Chest Primary X Velocity
Driver Chest Primary X Displacement
Driver Chest Redundant X
Driver Chest Redundant Y
Driver Chest Redundant Z
Driver Chest Resultant Redundant
Driver Chest Redundant X Velocity
Driver Chest Redundant X Displacement
Driver Chest Displacement
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver Pelvis Resultant
Driver Pelvis X Velocity
Driver Pelvis X Displacement
Driver Left Upper Tibia Moment X
Driver Left Upper Tibia Moment Y
Driver Right Upper Tibia Moment X

LIST OF DATA PLOTS...(CONTINUED)

Driver Right Upper Tibia Moment Y
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Left Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Driver Right Foot Fore Z
Driver Lap Belt Force
Driver Shoulder Belt Force
Driver Shoulder Belt Pullout
Driver Shoulder Belt Elongation
Passenger Head Primary X Velocity
Passenger Head Primary X Displacement
Passenger Head Redundant X
Passenger Head Redundant Y
Passenger Head Redundant Z
Passenger Head Resultant Redundant
Passenger Head Redundant X Velocity
Passenger Head Redundant X Displacement
Passenger Upper Neck Force X
Passenger Upper Neck Force Y
Passenger Upper Neck Force Z
Passenger Upper Neck Force Resultant
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Y
Passenger Upper Neck Moment Z
Passenger Upper Neck Moment Resultant
Passenger Chest Primary X Velocity
Passenger Chest Primary X Displacement
Passenger Chest Redundant X

LIST OF DATA PLOTS...(CONTINUED)

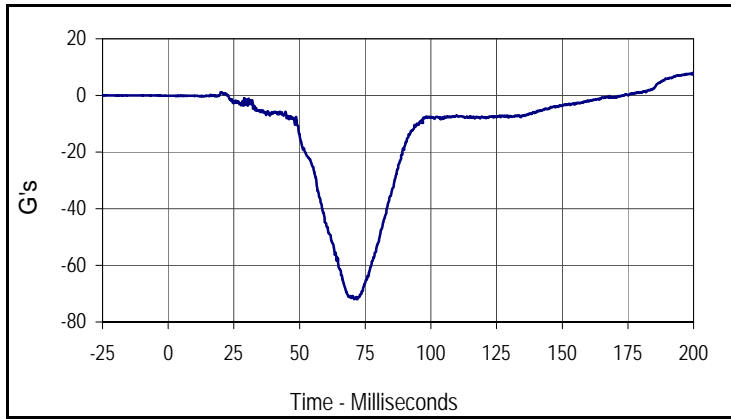
Passenger Chest Redundant Y
Passenger Chest Redundant Z
Passenger Chest Resultant Redundant
Passenger Chest Redundant X Velocity
Passenger Chest Redundant X Displacement
Passenger Chest Displacement
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Passenger Pelvis Y
Passenger Pelvis Z
Passenger Pelvis Resultant
Passenger Pelvis X Velocity
Passenger Pelvis X Displacement
Passenger Left Femur Force
Passenger Right Femur Force
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Left Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Right Foot Fore Z
Passenger Lap Belt Force
Passenger Shoulder Belt Force
Passenger Shoulder Belt Pullout
Passenger Shoulder Belt Elongation
Vehicle Left Rear X
Vehicle Left Rear X Velocity

LIST OF DATA PLOTS...(CONTINUED)

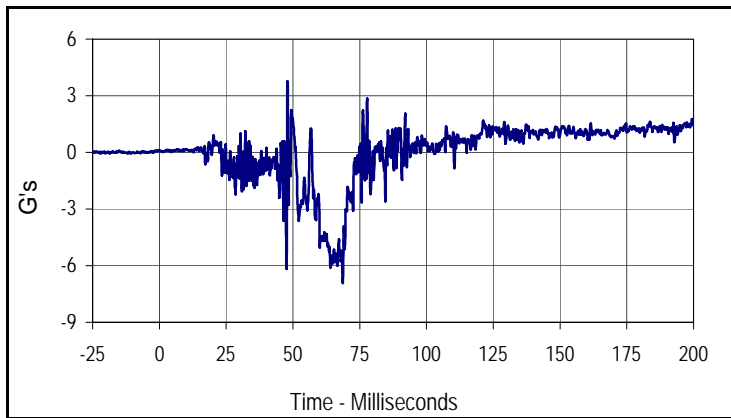
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Vehicle Right Rear X
Vehicle Right Rear X Velocity
Vehicle Right Rear X Displacement
Vehicle Engine Top
Vehicle Engine Top Velocity
Vehicle Engine Top Displacement
Vehicle Engine Bottom
Vehicle Engine Bottom Velocity
Vehicle Engine Bottom Displacement
Vehicle Left Brake Caliper
Vehicle Left Brake Caliper Velocity
Vehicle Left Brake Caliper Displacement
Vehicle Right Brake Caliper
Vehicle Right Brake Caliper Velocity
Vehicle Right Brake Caliper Displacement
Vehicle Instrument Panel
Vehicle Instrument Panel Velocity
Vehicle Instrument Panel Displacement
Vehicle Left Rear Z
Vehicle Left Rear Z Velocity
Vehicle Left Rear Z Displacement
Vehicle Right Rear Z
Vehicle Right Rear Z Velocity
Vehicle Right Rear Z Displacement

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck
 Test Program: NHTSA 35mph NCAP

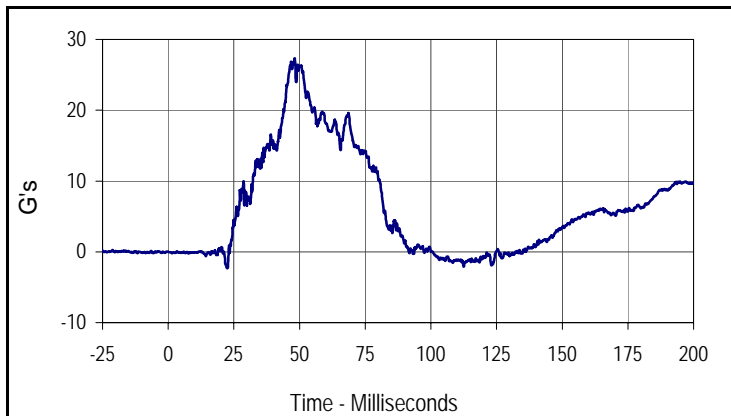
Test Date: 11/6/07
 NHTSA No.: M85206



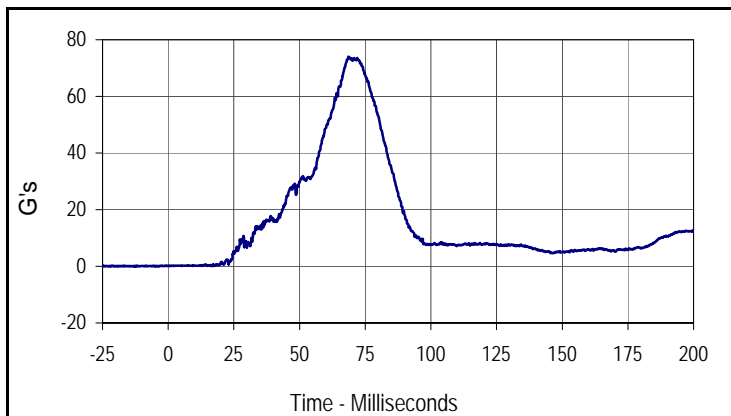
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Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
7.9	199.6	-72.0	70.8



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.7	48.0	-6.9	68.7



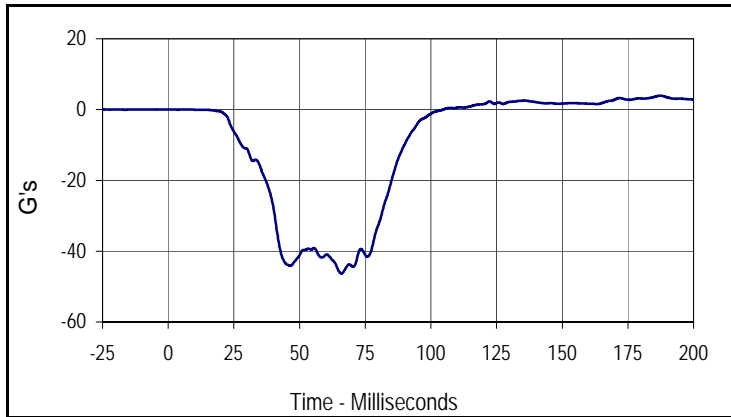
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Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
27.3	48.2	-2.3	22.5



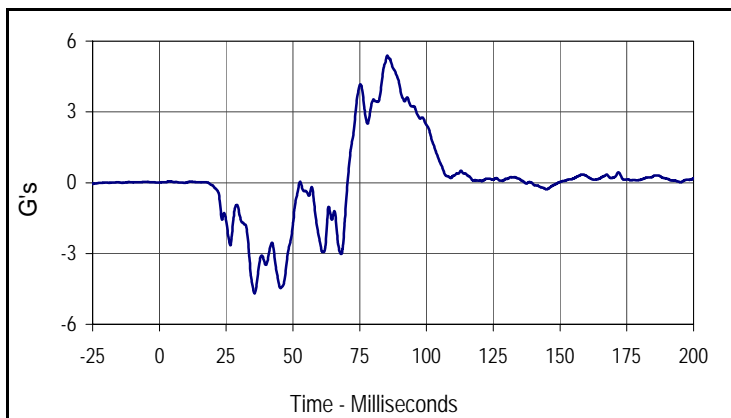
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
74.0	68.6	0.1	1.1

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck
 Test Program: NHTSA 35mph NCAP

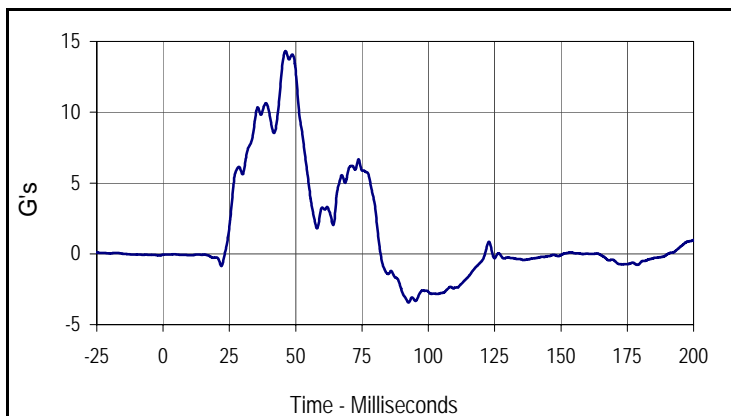
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 NHTSA No.: M85206



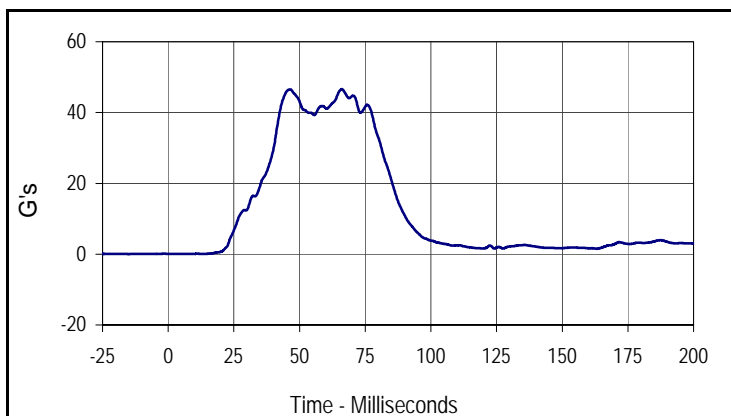
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Max	Time	Min	Time
3.9	187.5	-46.3	66.0



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
5.4	85.3	-4.7	35.6



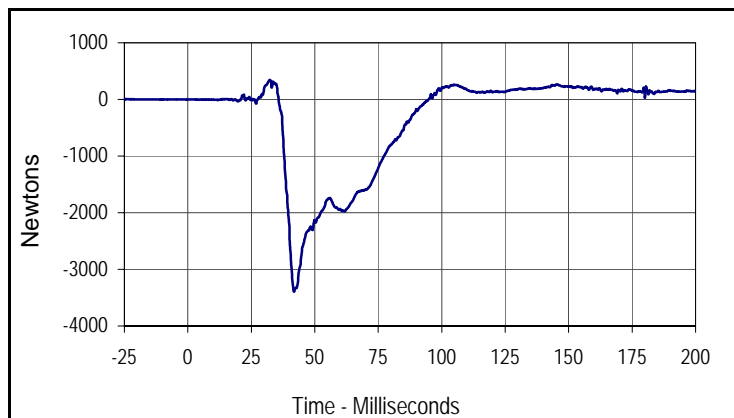
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Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
14.3	46.2	-3.4	92.6



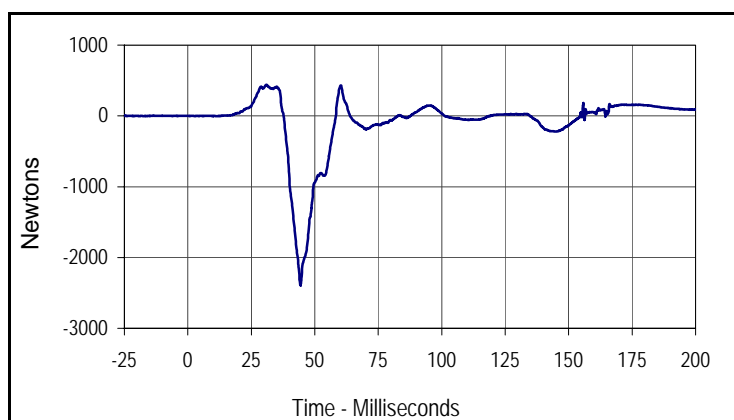
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
004	RES	180	G's
Max	Time	Min	Time
46.6	66.0	0.1	1.1

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck
 Test Program: NHTSA 35mph NCAP

Test Date: 11/6/07
 NHTSA No.: M85206



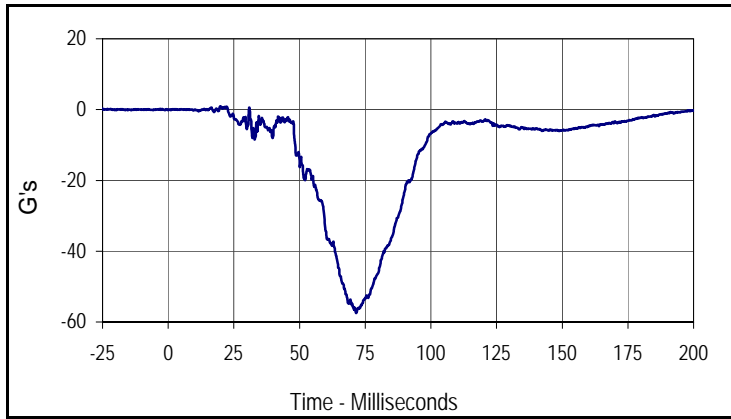
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CURNO	Type	SAE Class	Units
007	FIL	600	Newtons
Max	Time	Min	Time
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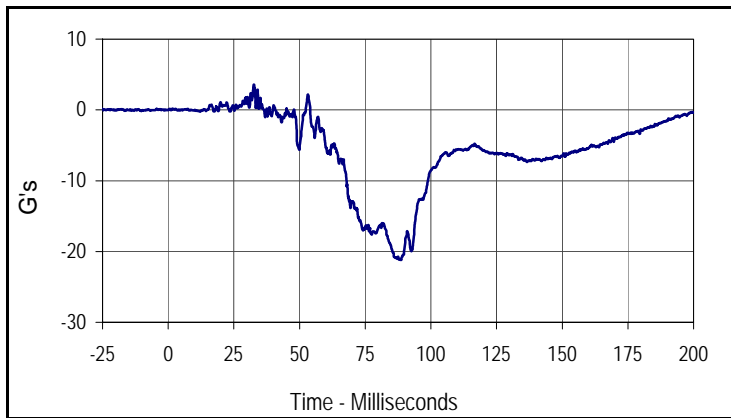
Curve Description			
Driver Right Femur Force Z			
CURNO	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
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Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck
 Test Program: NHTSA 35mph NCAP

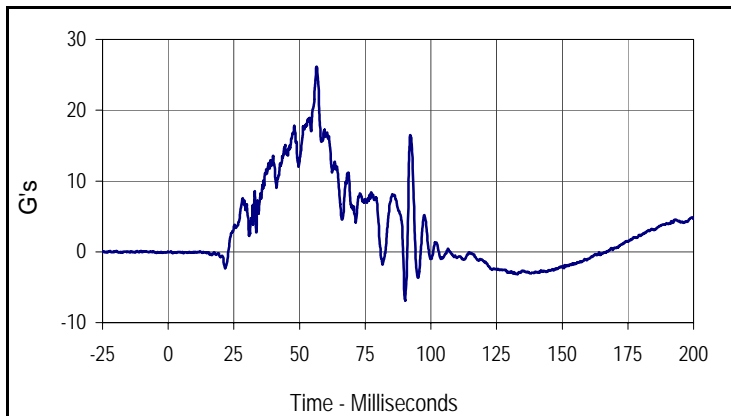
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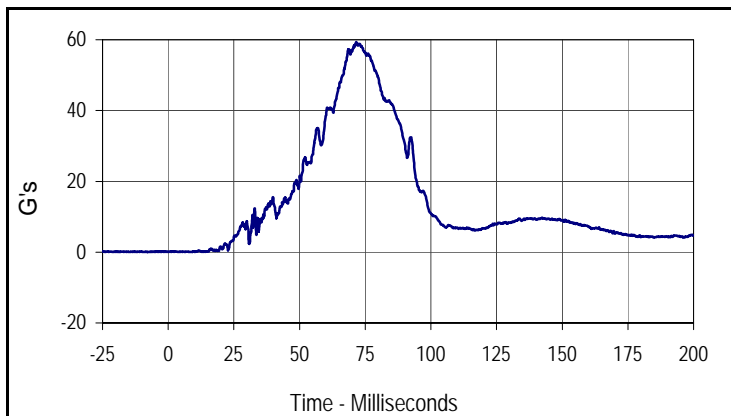
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
009	FIL	1000	G's
Max	Time	Min	Time
0.9	20.0	-57.5	71.6



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
010	FIL	1000	G's
Max	Time	Min	Time
3.6	32.6	-21.2	88.3



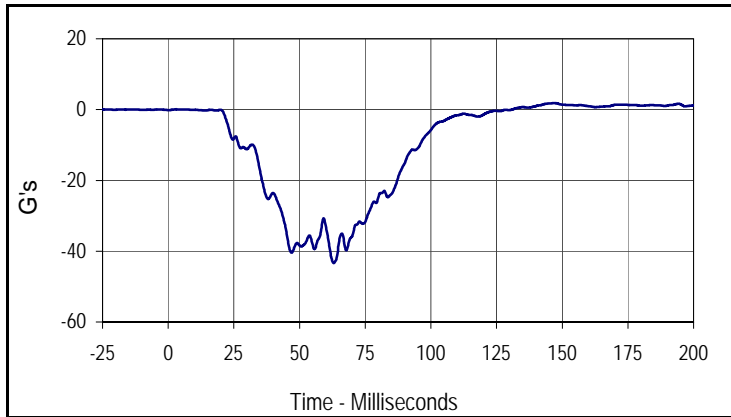
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011	FIL	1000	G's
Max	Time	Min	Time
26.2	56.5	-6.9	90.2



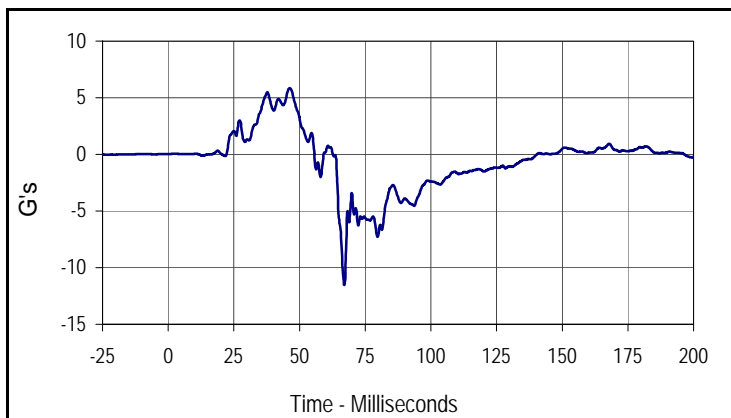
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Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
59.4	71.6	0.0	10.1

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck
 Test Program: NHTSA 35mph NCAP

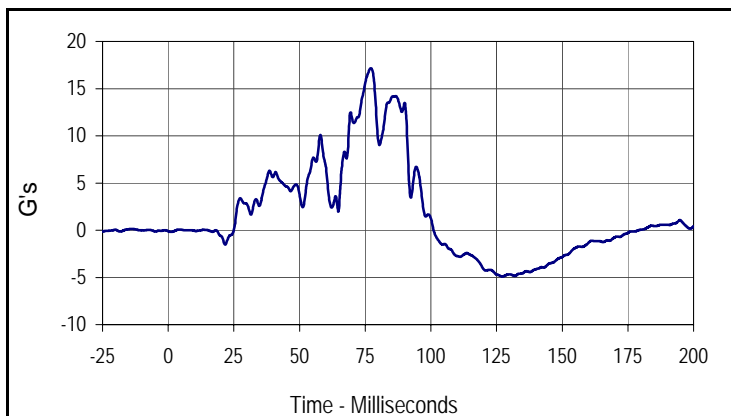
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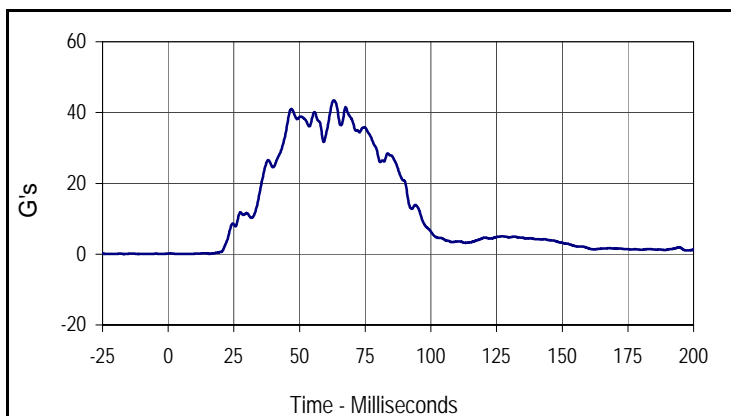
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
1.8	147.0	-43.4	63.0



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
5.8	46.2	-11.5	67.1



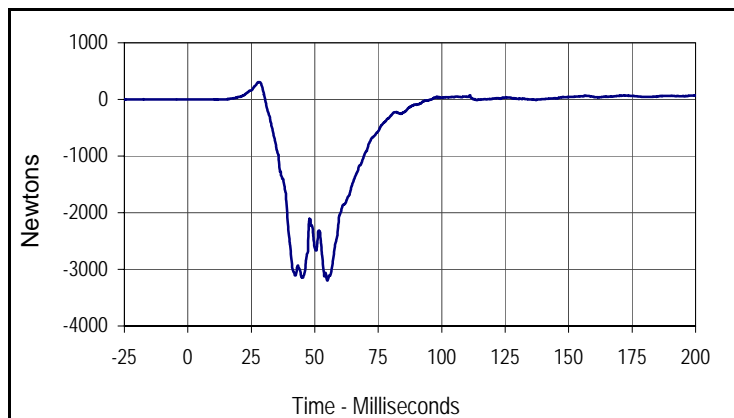
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Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
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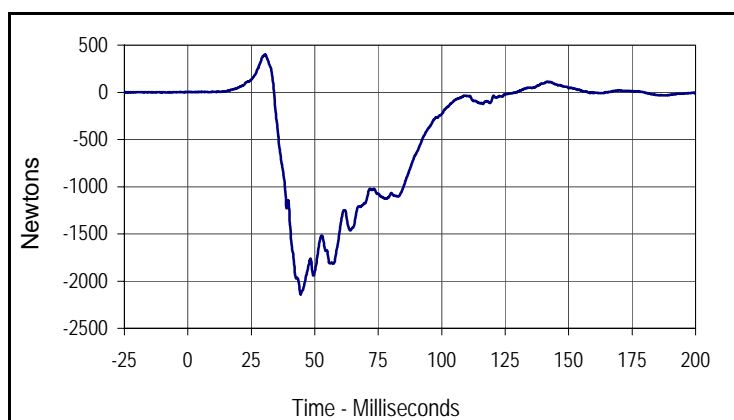
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
43.5	63.0	0.0	7.4

Test Vehicle: 2008 Nissan Frontier SE 4X4 2-Door Truck
 Test Program: NHTSA 35mph NCAP

Test Date: 11/6/07
 NHTSA No.: M85206



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
307.4	28.3	-3199.0	55.0



Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
400.2	30.4	-2139.6	44.4

APPENDIX C
DUMMY CALIBRATION DATA

Test Program: Hybrid III 50th Percentile Male Head Drop Test

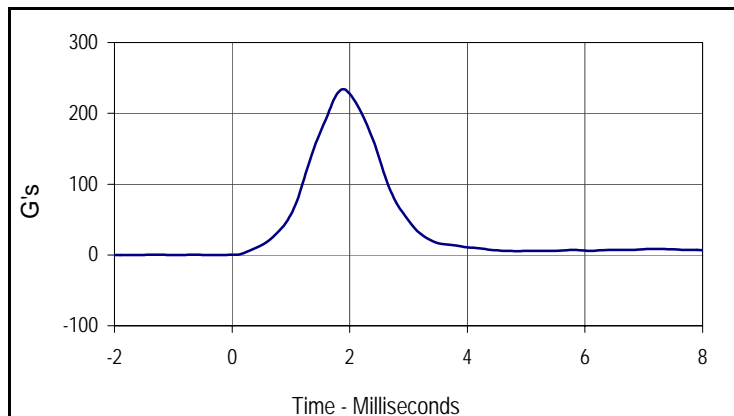
Test Date: 10/25/07

ATD Serial No.: 035

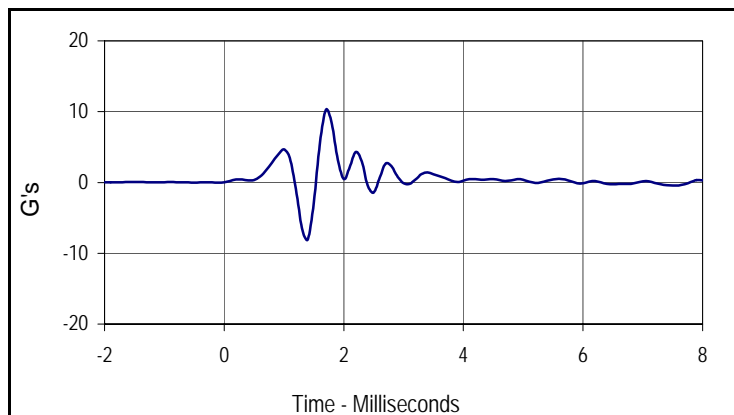
Test I.D.: HD10T



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	233.9	Pass
Peak Lateral Acceleration	G's	≤15.0	10.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
233.9	1.9	0.0	-0.2



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
10.3	1.7	-8.1	1.4

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

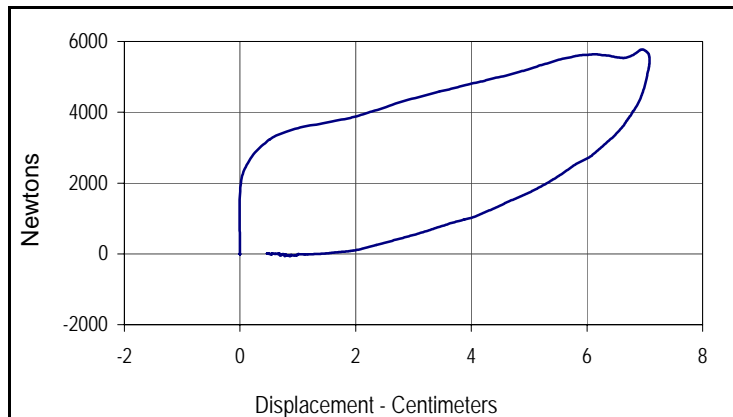
Test Date: 10/25/07

ATD Serial No.: 035

Test I.D.: CH10T



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.80	Pass
Peak Probe Force	Newtons	5159 to 5893	5777	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	7.08	Pass
Internal Hysteresis	%	69 to 85	73.2	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	73.2
Peak Probe Force		Peak Chest Deflection	
5777		7.08	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

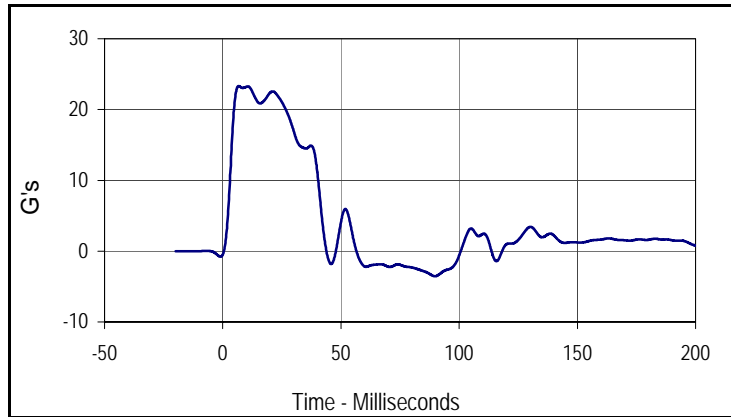
Test Date: 10/25/07

ATD Serial No.: 035

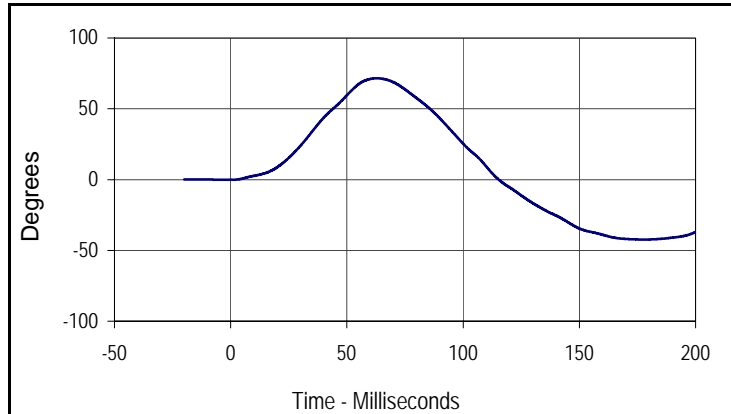
Test I.D.: NF10T



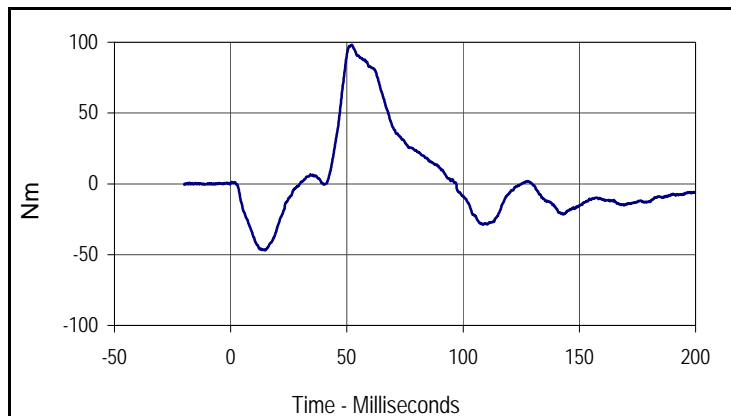
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	7.04	Pass	
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.2	Pass
	20 Msec.	G's	17.6 to 22.6	22.4	Pass
	30 Msec.	G's	12.5 to 18.5	17.0	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	17.0	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	41.9	Pass	
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	71.6	Pass
	Time	Msec.	57.0 to 64.0	62.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	115.3	Pass	
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	98.1	Pass
	Time	Msec.	47.0 to 58.0	52.1	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	97.0	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.3	6.7	-3.5	89.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
71.6	62.8	-42.3	178.6



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
98.1	52.1	-47.0	14.7

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

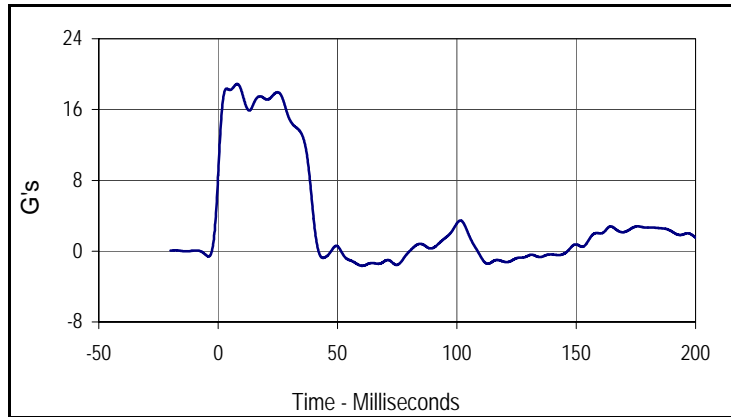
Test Date: 10/25/07

ATD Serial No.: 035

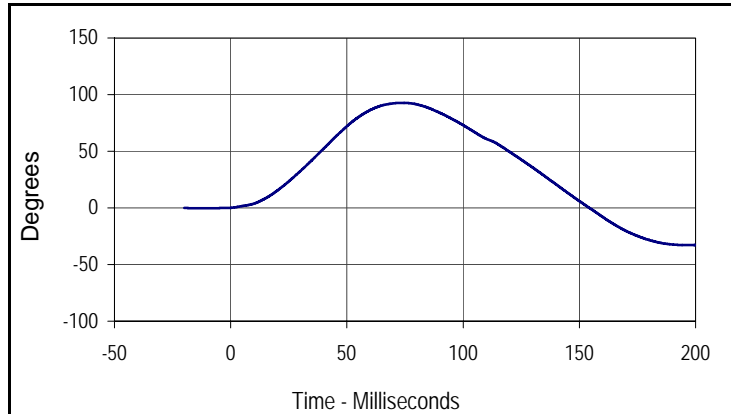
Test I.D.: NE10T



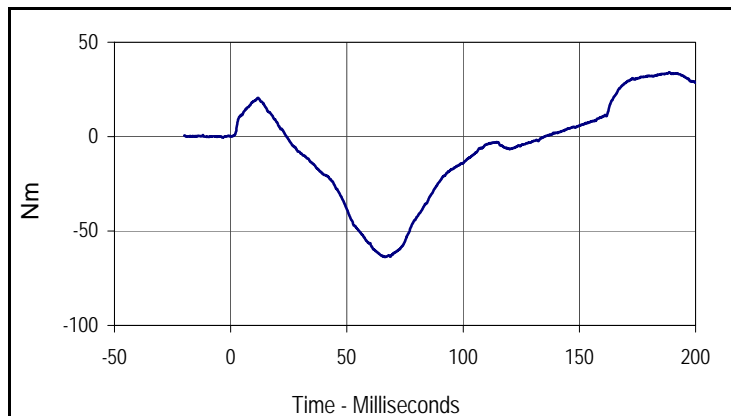
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/s	5.94 to 6.19	6.07	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	17.2	Pass
	30 Msec.	G's	11.0 to 16.0	14.8	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	14.8	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	39.6	Pass	
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	92.7	Pass
	Time	Msec.	72.0 to 82.0	73.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	154.3	Pass	
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-63.8	Pass
	Time	Msec.	65.0 to 79.0	66.4	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	135.0	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.9	8.0	-1.7	60.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
92.7	73.7	-32.8	196.1



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
34.0	188.9	-63.8	66.4

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 10/25/07

ATD Serial No.: 035

Test I.D.: LK10T , RK10T

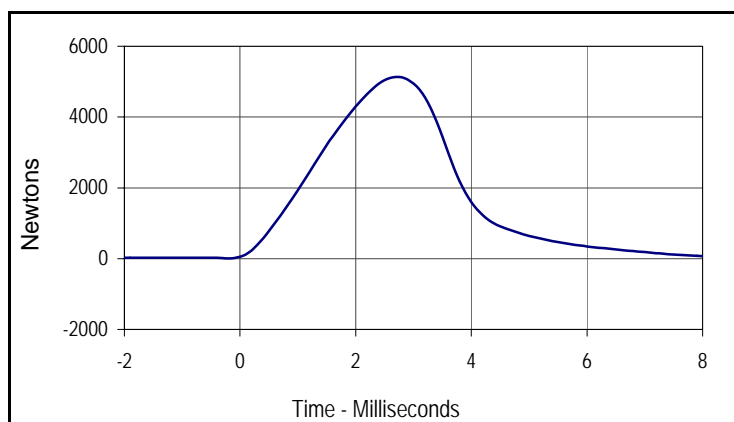


Left Knee

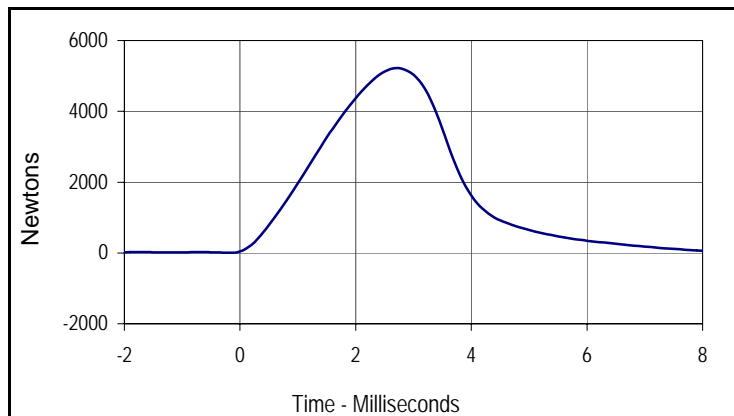
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5136	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5223	Pass
Overall Test Results				Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5136.3	2.7	3.7	9.8



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5223.3	2.7	-2.6	9.8

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 10/25/07

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	88	Pass
D - "H" point from seat back	mm	135 to 140	139	Pass
E - Shoulder pivot from back	mm	84 to 94	87	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	42	Pass
I - Shoulder to elbow length	mm	330 to 345	334	Pass
J - Elbow rest height	mm	190 to 211	209	Pass
K - Buttock to knee length	mm	579 to 604	596	Pass
L - Popliteal length	mm	429 to 455	448	Pass
M - Knee pivot height	mm	485 to 500	497	Pass
N - Buttock popliteal length	mm	452 to 477	473	Pass
O - Chest depth	mm	213 to 229	220	Pass
P - Foot length	mm	251 to 267	255	Pass
V - Shoulder breadth	mm	422 to 437	427	Pass
W - Foot breadth	mm	91 to 107	103	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop Test

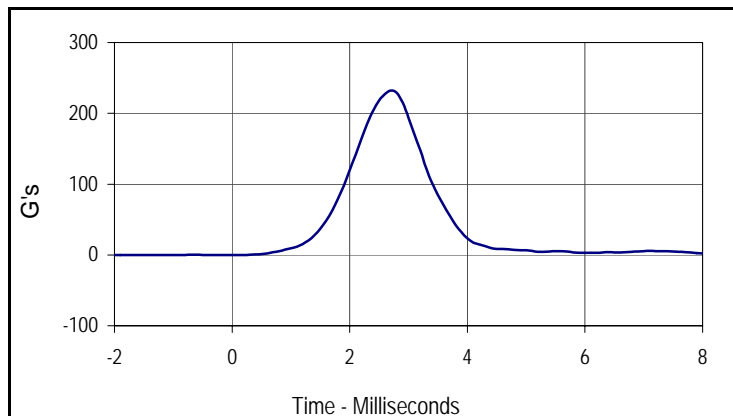
Test Date: 10/25/07

ATD Serial No.: 034

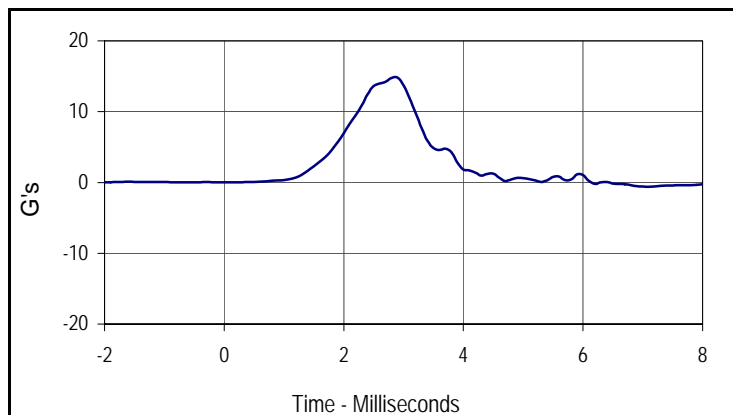
Test I.D.: HD10S



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	232.0	Pass
Peak Lateral Acceleration	G's	≤15.0	14.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
232.0	2.7	0.0	0.0



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
14.8	2.9	0.0	0.0

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

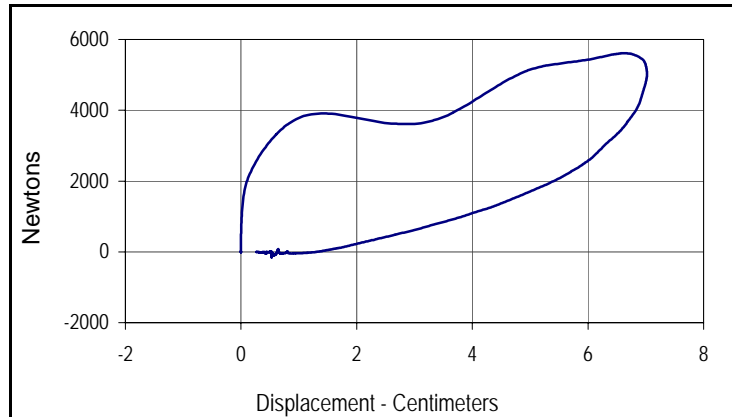
Test Date: 10/25/07

ATD Serial No.: 034

Test I.D.: CH10S



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.63	Pass
Peak Probe Force	Newtons	5159 to 5893	5613	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	7.02	Pass
Internal Hysteresis	%	69 to 85	72.2	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	72.2
Peak Probe Force		Peak Chest Deflection	
5613		7.02	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

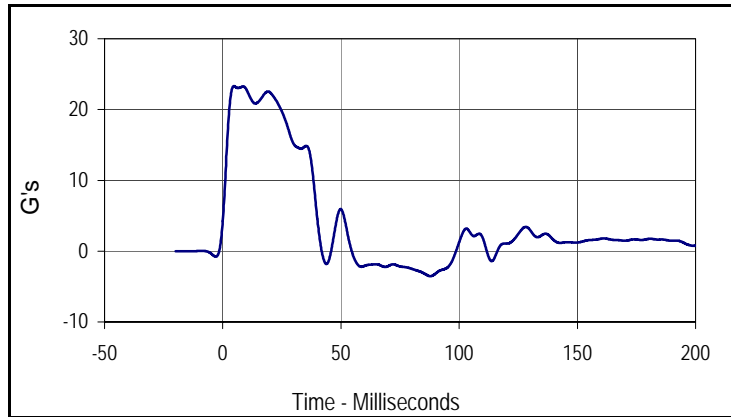
Test Date: 10/25/07

ATD Serial No.: 034

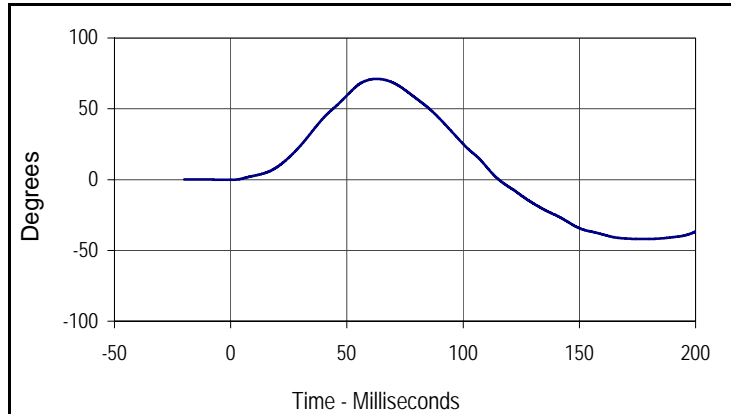
Test I.D.: NF10S



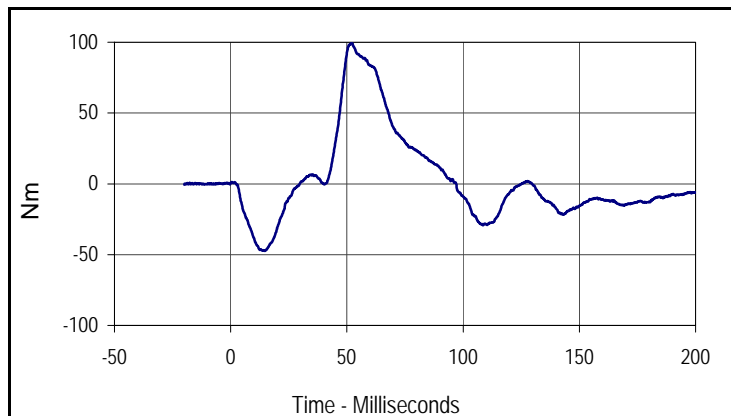
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	7.05	Pass	
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.8	Pass
	20 Msec.	G's	17.6 to 22.6	22.4	Pass
	30 Msec.	G's	12.5 to 18.5	15.1	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	15.1	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	39.9	Pass	
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	71.2	Pass
	Time	Msec.	57.0 to 64.0	62.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	115.4	Pass	
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	99.3	Pass
	Time	Msec.	47.0 to 58.0	52.1	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	97.0	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.3	4.7	-3.5	87.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
71.2	62.7	-42.0	178.6



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
99.3	52.1	-47.4	14.7

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

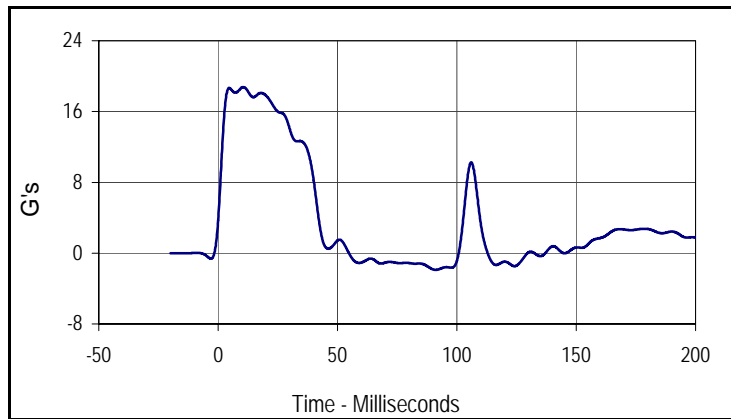
Test Date: 10/25/07

ATD Serial No.: 034

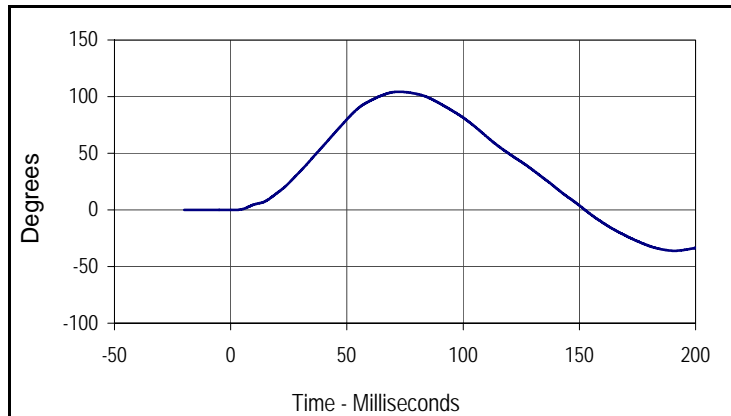
Test I.D.: NE10S



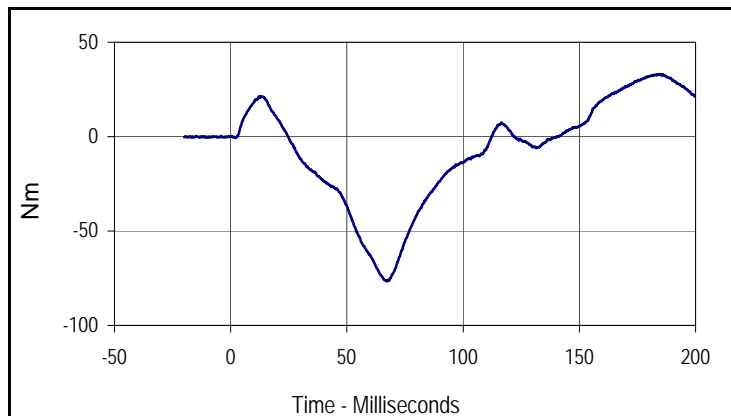
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/s	5.94 to 6.19	6.05	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.7	Pass
	20 Msec.	G's	14.0 to 19.0	17.8	Pass
	30 Msec.	G's	11.0 to 16.0	14.0	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	14.0	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	41.6	Pass	
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	104.3	Pass
	Time	Msec.	72.0 to 82.0	72.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	152.4	Pass	
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-76.5	Pass
	Time	Msec.	65.0 to 79.0	67.0	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	140.8	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.8	10.5	-1.9	91.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
104.3	72.4	-36.1	190.9



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
33.1	184.8	-76.5	67.0

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 10/25/07

ATD Serial No.: 034

Test I.D.: LK10S , RK10S

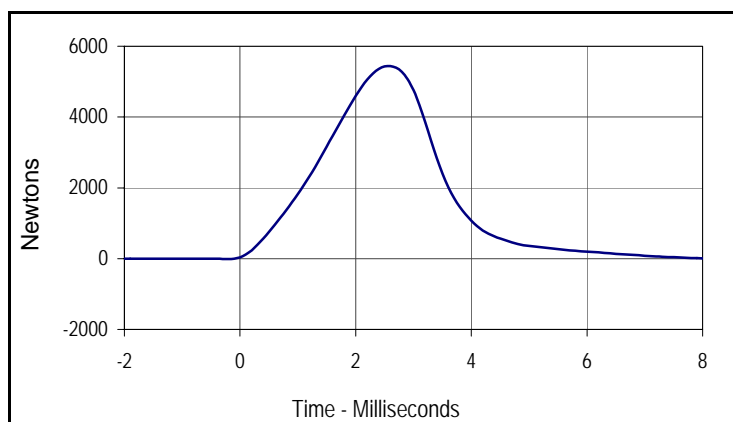


Left Knee

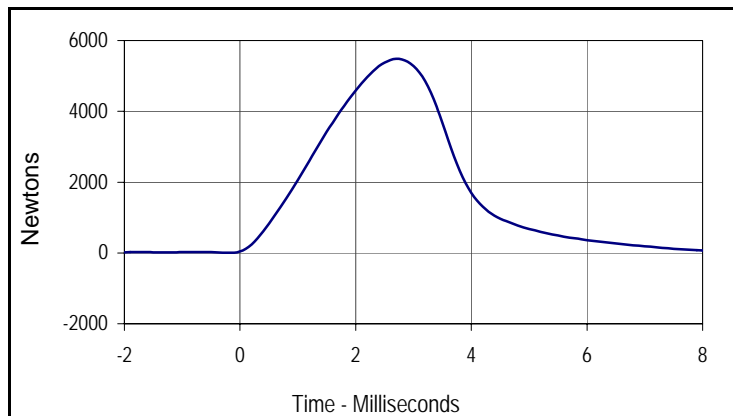
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5442	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5482	Pass
Overall Test Results				Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5442.4	2.6	-14.7	-0.2



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5482.2	2.7	-2.6	9.8

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 10/25/07

ATD Serial No.: 034

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	89	Pass
D - "H" point from seat back	mm	135 to 140	136	Pass
E - Shoulder pivot from back	mm	84 to 94	89	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	296	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	204	Pass
K - Buttock to knee length	mm	579 to 604	597	Pass
L - Popliteal length	mm	429 to 455	443	Pass
M - Knee pivot height	mm	485 to 500	491	Pass
N - Buttock popliteal length	mm	452 to 477	476	Pass
O - Chest depth	mm	213 to 229	213	Pass
P - Foot length	mm	251 to 267	256	Pass
V - Shoulder breadth	mm	422 to 437	428	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	993	Pass
Z - Waist circumference	mm	836 to 866	842	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
Overall Test Results				Pass

Test Program: Dummy Damage Checklist
 ATD Serial No.: 035

Test Date: 10/25/07
 Test I.D.: N/A



GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:

Test Program: Dummy Damage Checklist
 ATD Serial No.: 034

Test Date: 10/25/07
 Test I.D.: N/A



GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:
