REPORT NUMBER TR-P26001-04-NC

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

HONDA OF CANADA MFG.
2006 HONDA CIVIC LX
4-DOOR SEDAN

NHTSA NUMBER: M65302

PREPARED BY:
KARCO ENGINEERING, LLC
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DECEMBER 8, 2005

FINAL REPORT

PREPARED FOR:
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16. Abstract

A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2006 Honda Civic LX 4-Door Sedan at Karco Engineering, LLC on 12/08/05. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 56.16 km/h. The ambient temperature at the barrier face at the time of impact is 12.8 degrees Celcius. The vehicle's maximum post-test static crush is 530 mm at 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	289.7	298.3
Max. Chest Accel. (3 msec Clip)	G's	60	43.9	41.3
Left Femur Force	Newtons	10008	-2436.2	-1656.1
Right Femur Force	Newtons	10008	-280.2	-1924.5

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SECTION 1
PURPOSE AND SUMMARY OF TEST M65302

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. DTNH22-01-D-02005. 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 2006 Honda Civic LX 4-Door Sedan at a velocity of 56.16 km/h. The test was performed at Karco Engineering, LLC on December 8, 2005.

Two (2) real-time and fifteen (15) 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 also placed on the driver’s and passenger’s lap and shoulder belts to measure dummy torso and pelvic section loading. Also, shoulder belt spool-off was measured for the driver and passenger dummy. The driver (position 1) ATD (Serial No. 34) and the right-front passenger (position 2) ATD (Serial No. 35) were calibrated three tests prior to this test.

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

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

The maximum static crush of the vehicle was 530 mm at the vehicle's centerline and 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 and chest contacted the airbag, and the abdomen had no contact. Both knees contacted the knee bolster.

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

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC 36	Clip (g)	Chest Defl. (mm)	Left Femur (N)	Right Femur (N)
Driver	289.7	43.9	-32.1	-2436.2	-280.2
Passenger	298.3	41.3	-33.0	1656.1	-1924.5

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: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

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	mile/h	km/h	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	^oF	^oC	=(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: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.16
Test Weight	kg	1438
Impact Angle	degrees	0
Average Rebound	mm	670
Maximum Static Crush	mm	530

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)	20	N/A
Seat Back Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 34	50% Male Hybrid III No. 35
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag
Abdomen Contact	None	Airbag
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

MOVIE COVERAGE

Cameras	Standard	Additional
High Speed	14	1
Real Time	1	1
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: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M65302	Anti-Lock Brakes	Yes
Make	Honda	All Wheel Drive	No
Model	Civic LX	Power Steering	Yes
Body Style	4-Door Sedan	Driver Front Airbag	Yes
Vin No.	2HGFA16546H502967	Driver Side Airbag	Yes
Color	Blue	Driver Head Airbag	No
Delivery Date	11/30/2005	Driver Curtain Airbag	Yes
Odometer (Miles)	18.4	Pass. Airbag	Yes
Dealer	Valley High Toyota / Honda	Pass. Side Airbag	Yes
Transmission	5-Speed Automatic	Pass. Head Airbag	No
Final Drive	Front	Pass. Curtain Airbag	Yes
Type/No. Cyl.	V-4	Pre-Tensioners	Yes
Engine Disp. (L)	1.8	Load Limiters	Yes
Engine Placement	Transverse	Bucket Seats	Yes
Roof Rack	No	Air. Cond.	Yes
Sunroof/T-Top	No	AM/FM Cassette	Yes
Tinted Glass	No	Tilt Steering	Yes
Traction Control	No	Automatic Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	No
Rear Disc	No	Other	None

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

DATA FROM CERTIFICATION LABEL

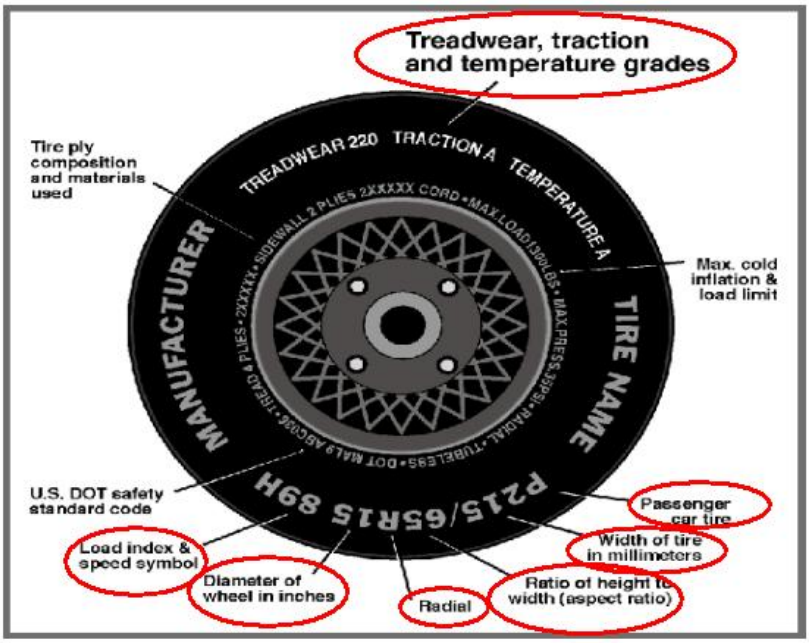
Manufactured By	Honda of Canada MFG.	GVWR (kg)	1665
		GAWR Front (kg)	880
Date of Manufacture	Nov-05	GAWR Rear (kg)	785

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				385
Cargo Weight (RCLW) (kg)				45

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

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)	308	308
Cold Pressure (kpa)	220	220
Recommended Tire Size	P205/55R16	P205/55R16
Tire Size on Vehicle	P235/70R16	P235/70R16
Tire Manufacturer	Good Year	Good Year
Treadwear	260	260
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester + 2 Steel	2 Polyester + 2 Steel
Load Index/Speed Symbol	89H	89H
Tire Material	Polyester + Steel	Polyester + Steel
DOT Safety Code Right	M6T2-LNER-3905	M6T2-LNER-3905
DOT Safety Code Left	M6T2-LNER-3905	M6T2-LNER-3905

DATA SHEET NO. 2…(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	387	244	631	429	303	732
Right	kg	376	239	616	408	298	706
Ratio	%	61.2	38.8	100	58.2	41.8	100
Totals	kg	764	484	1247	837	601	1438

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1247
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	45
Calculated Vehicle Target Wt. (TVTW)	kg	1445

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	655	664	673	681	1001
As Tested	mm	642	650	638	630	1078

Vehicle Wheel Base (mm): 2715

Weight of Ballast Secured in cargo area (kg): 74

Weight of Items Removed (kg): 61

Vehicle Components Removed: Trunk lid, exaust, rear upper and lower seat cushions, seat buckles, spare tire and tools.

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

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L): 49.96

Actual Test Volume with entire fuel System Filled (L): 46.55

Test Fluid Type: Stoddard Solvent

Kinematic Viscosity: as per ASTM Standard D484-71 Purple

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 for 3 seconds when ignition is in "on" position.

DATA SHEET NO. 3
POST-TEST IMPACT DATA

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	56.16
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	56.12

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4330	3997	-333
Center	mm	4497	3967	-530
Right Side	mm	4326	3972	-354

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	660
Center	mm	690
Right Side	mm	660
Average	mm	670

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

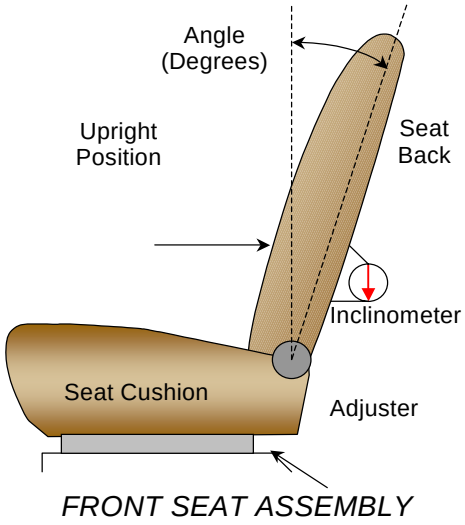
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

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 of the seat back using a digital inclinometer.

SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	11.7 @ headrest
Passenger w/seated Dummy	12.4 @ headrest



FRONT SEAT ASSEMBLY

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 with the vertical adjustment at the lowest position obtainable for the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel (Detent)	Placed in Position (Detent)
Driver Seat	25	11
Passenger Seat	25	13

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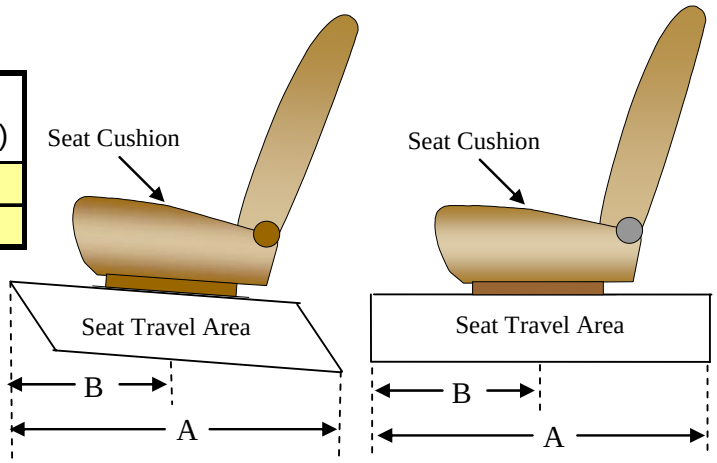


SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

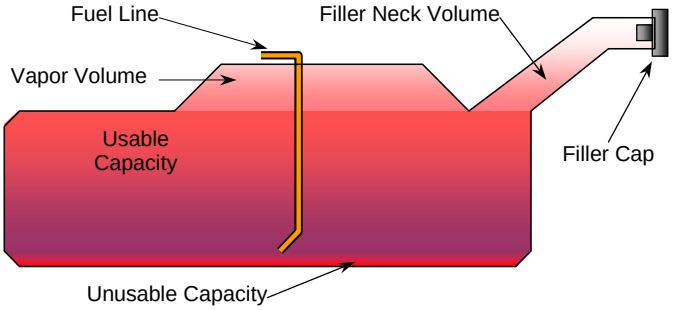
	Total # of Positions	Placed in Position #
Driver Seat	4	1
Passenger Seat	4	1

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	49.96
Usable Capacity of "Optional" Tank	N/A
Usable Capacity used for FMVSS 301	45.79 to 46.93
Actual Amount of Solvent used	46.55

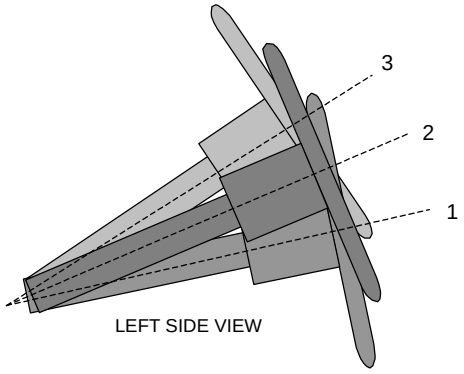
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the “ON” position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies 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 positon No. 1	21.0	180
Geometric center position No. 2	24.0	195
Uppermost position No. 3	27.0	220

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

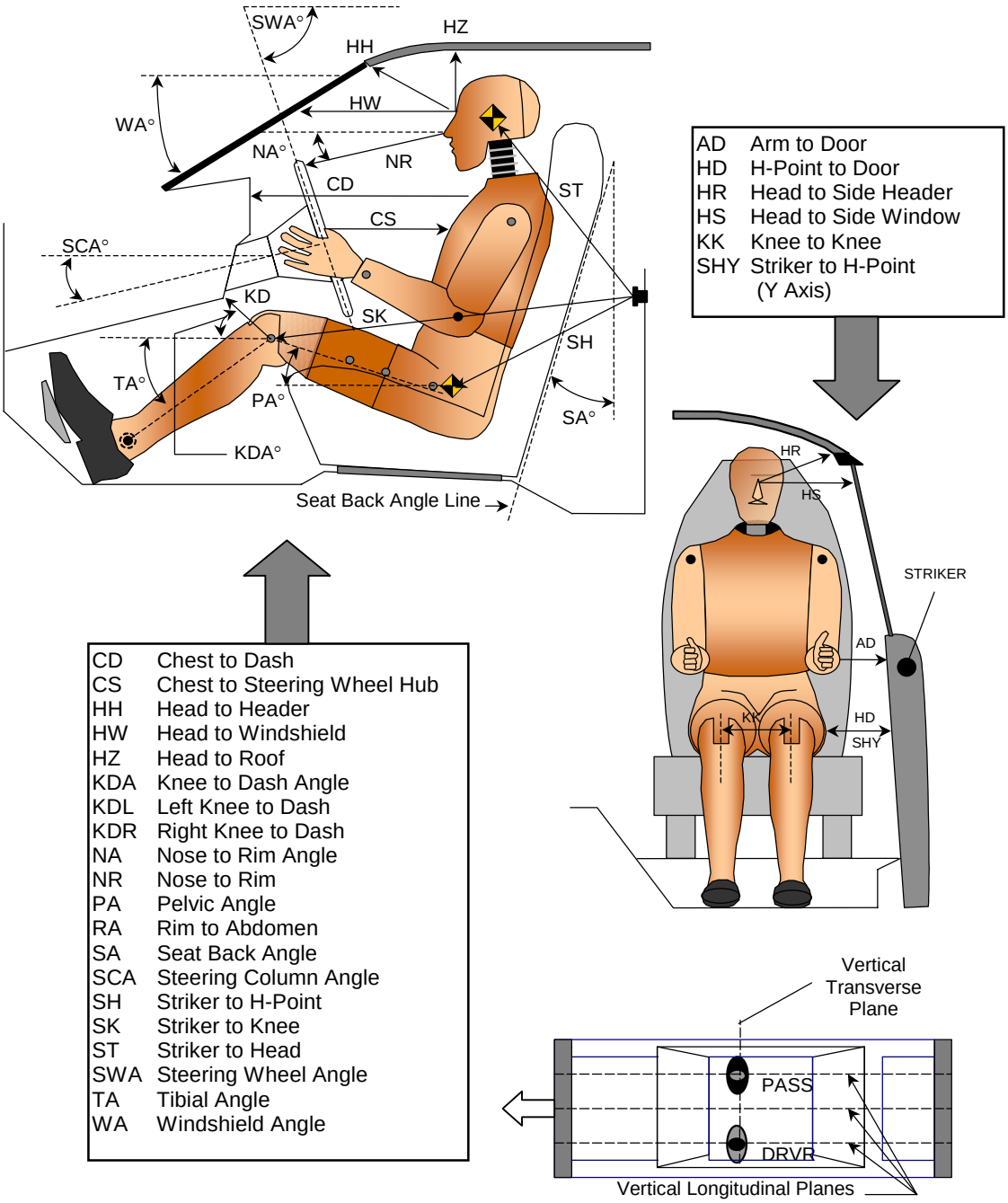
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		23.2		
SWA	Steering Wheel Angle		66.0		
SCA	Steering Column Angle		24.0		
SA	Seat Back Angle		11.7@headrest		12.4@headrest
HZ	Head to Roof (Z)	215	90.0	185	90.0
HH	Head to Header	355		330	
HW	Head to Windshield	650		650	
HR	Head to Side Header (Y)	300		305	
NR	Nose to Rim	390	16.0		
CD	Chest to Dash	580		620	
CS	Chest to Steering Hub	300			
RA	Rim to Abdomen	180			
KDL	Left Knee to Dash	155		175	
KDR	Right Knee to Dash	160		170	
PA	Pelvic Angle		23.0		23.4
TA	Tibia Angle		50.0		42.0
KK	Knee to Knee (Y)	280		280	
SK	Striker to Knee	620	5.0	645	8.0
ST	Striker to Head	510	76.4	530	14.0
SH	Striker to H-Point	225	35.3	200	35.0
SHY	Striker to H-Point (Y)	280		250	
HS	Head to Side Window	280		250	
HD	H-Point to Door (Y)	160		120	
AD	Arm to Door (Y)	90		90	

DATA SHEET NO. 5…(CONTINUED)
DUMMY POSITIONING IN VEHICLE

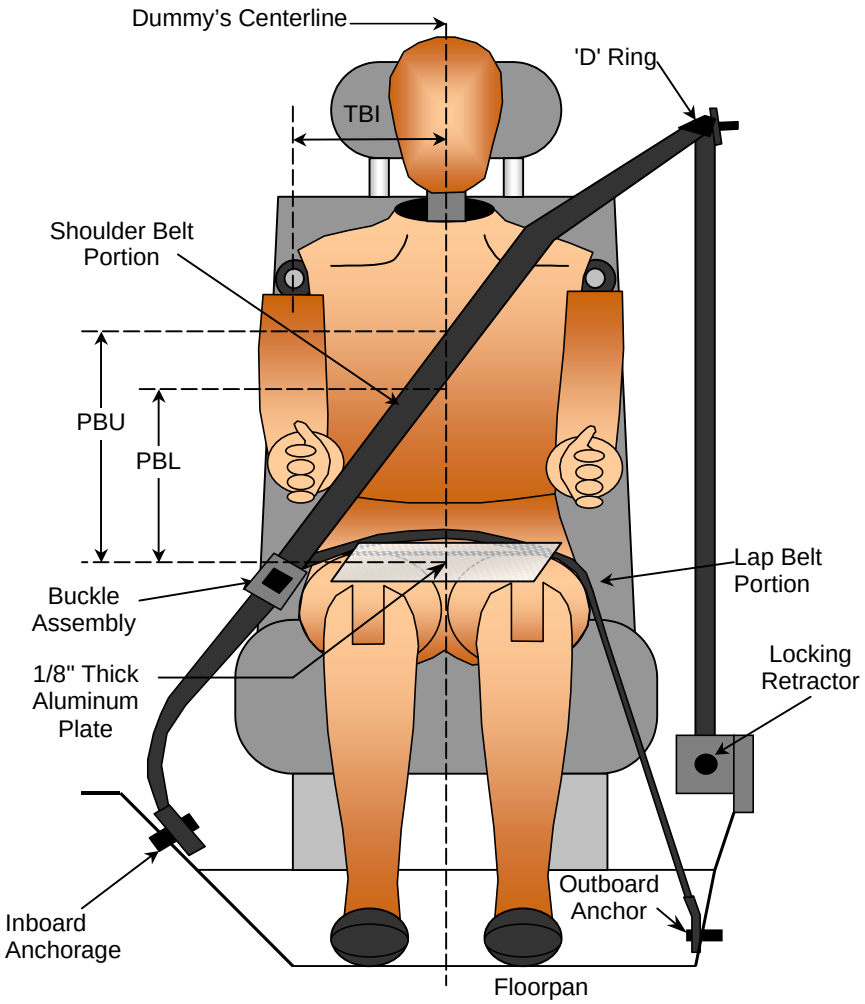
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	189	200
PBU - Top Surface of reference to belt upper edge	mm	280	250
PBL - Top Surface of reference to belt lower edge	mm	200	180
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7
VEHICLE ACCELEROMETER LOCATION

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

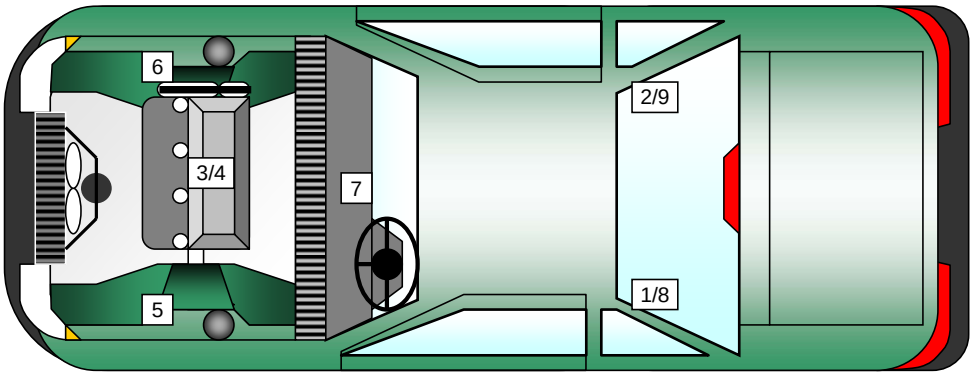
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/8/05

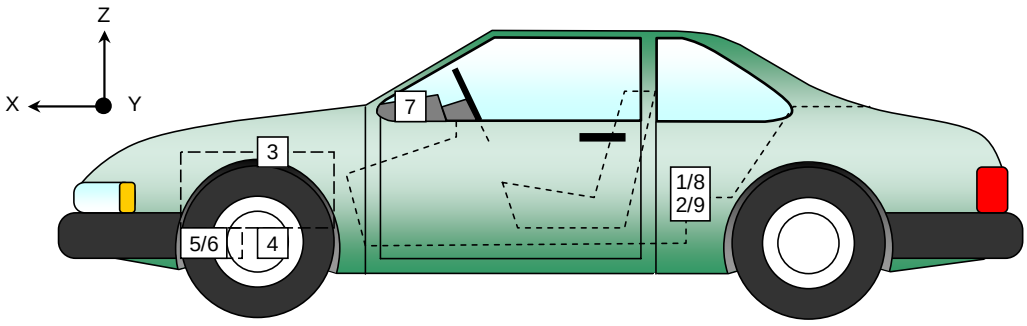
VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Left Rear X-Member	1866	-733	378
2	Right Rear X-Member	1866	733	378
3	Engine Top			[1]
4	Engine Bottom	3961	-119	123
5	Left Brake Caliper	3538	-667	273
6	Right Brake Caliper	3538	667	273
7	Instrument Panel			[1]
8	Left Rear X-Member (Z-Axis)	1866	-733	378
9	Right Rear X-Member (Z-Axis)	1866	733	378

Reference Planes: X=From Rear Surface of Vehicle, Y=Vehicle Centerline, Z=Ground Plane

1.) Not installed





DATA SHEET NO. 8
SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	730	730
Shoulder Belt length as measured on ATD	mm	910	920
Lap Belt length as measured on ATD	mm	500	520
Remainder of belt on reel	mm	890	800
Total belt length for continuous webbing systems	mm	3030	2970

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	220	210
As determined electronically	mm	190.0	221.0

BELT STRETCH DATA

Measuerment 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: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

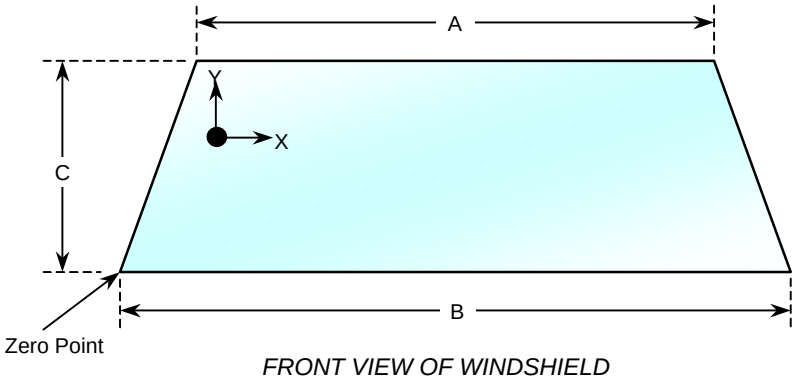
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

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: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2144	2144	100
Right Side	2144	2144	100
Total	4288	4288	100



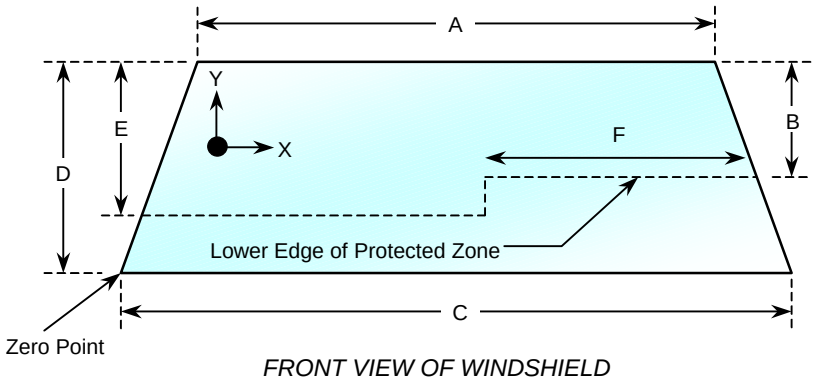
FRONT VIEW OF WINDSHIELD

WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1170	15
B	mm	1358	10
C-Left	mm	880	20
C-Right	mm	880	20

DATA SHEET NO. 10
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05



FRONT VIEW OF WINDSHIELD

WINDSHIELD AND PROTECTED ZONE

Item	Units	Value
A	mm	1170
B	mm	586
C	mm	1358
D	mm	880
E	mm	620
F	mm	500

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: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

Test Time: 11:28 AM Temperature: 12.8 Deg. C.

STODDARD SOLVENT SPILLAGE MEASUREMENTS

A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)

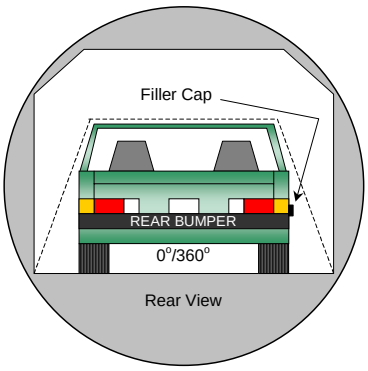
B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)

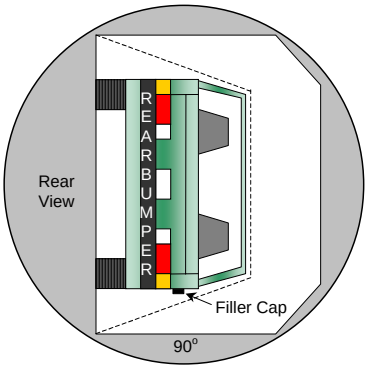
C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)

D. Spillage Location Details: No leakage occurred

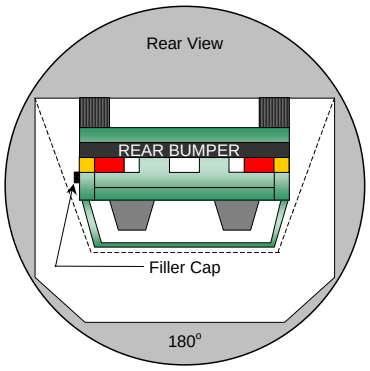
DATA SHEET NO. 12
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

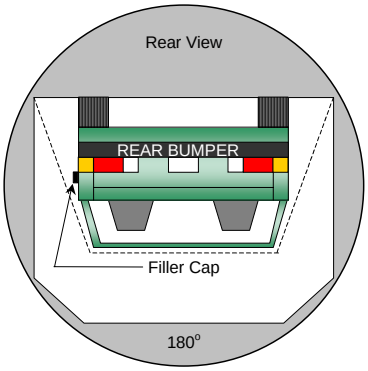




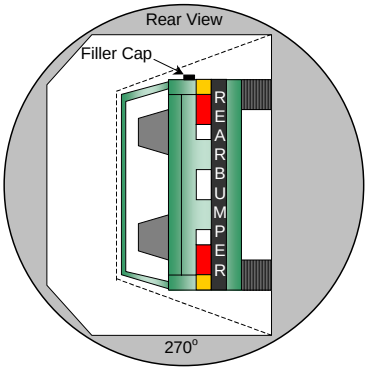
0° to 90°

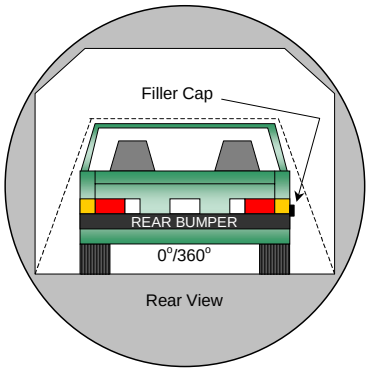


90° to 180°



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: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	86	300	386
90° to 180°	79	300	379
180° to 270°	79	300	379
270° to 360°	78	300	378

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

DATA SHEET NO. 13
VEHICLE MEASUREMENTS

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	4497	3967	-530
2	RSOV to front of engine	mm	3974	3787	-187
3	RSOV to firewall centerline	mm	3757	3692	-65
4	RSOV to leading edge of right door	mm	3120	3120	0
5	RSOV to leading edge of left door	mm	3131	3121	-10
6	RSOV to lower leading edge of right door	mm	3114	3116	2
7	RSOV to lower leading edge of left door	mm	3106	3107	1
8	RSOV to upper trailing edge of right door	mm	2005	2000	-5
9	RSOV to upper trailing edge of left door	mm	2010	2001	-9
10	RSOV to lower trailing edge of right door	mm	2013	2020	7
11	RSOV to lower trailing edge of left door	mm	2028	2027	-1
12	RSOV to bottom of right 'A' pillar	mm	3083	3083	0
13	RSOV to bottom of left 'A' pillar	mm	3092	3093	1
14	RSOV to firewall on right side	mm	3676	3607	-69
15	RSOV to firewall on left side	mm	3667	3562	-105
16	RSOV to steering column	mm	2693	2707	14
17	Center of steering column to left 'A' pillar	mm	418	425	7
18	Center of steering column to headlining	mm	415	420	5
19	RSOV to right side of front bumper	mm	4326	3972	-354
20	RSOV to left side of front bumper	mm	4330	3997	-333
21	Length of engine block	mm	500	500	0
RD	RSOV to right side of dash panel	mm	2841	2836	-5
CD	RSOV to center of dash panel	mm	2765	2774	9
LD	RSOV to left side of dash panel	mm	2818	2816	-2

DATA SHEET NO. 13…(CONTINUED)
VEHICLE STRUCTURAL MEASUREMENTS

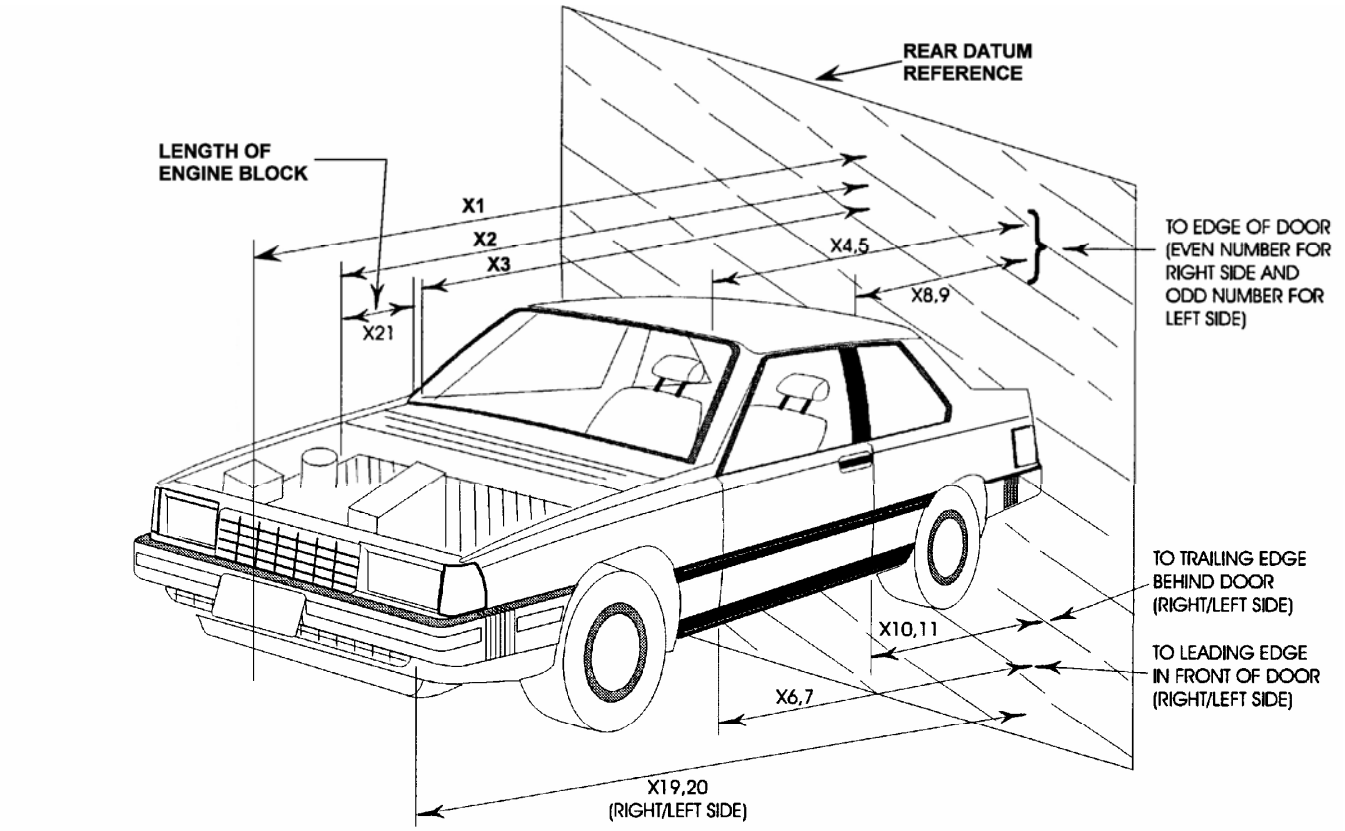
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

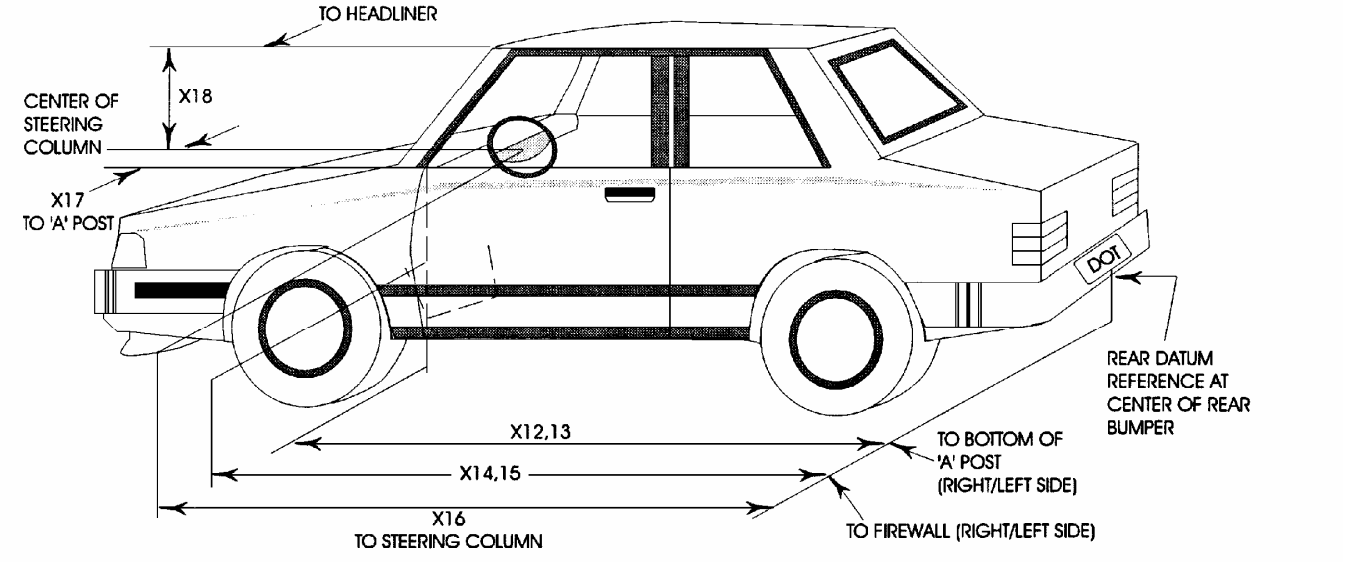
VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	4497	3967	-530
2	Total width	mm	1745	1748	3
3	Bumper top height	mm	562	597	35
4	Bumper bottom height	mm	184	154	-30
5	Longitudinal member top height	mm	498	560	62
6	Longitudinal member bottom height	mm	418	484	66
7	Distance between longitudinal members	mm	875	891	16
8	Longitudunal member width	mm	75	71	-4
9	Engine top height	mm	809	823	14
10	Engine bottom height	mm	162	183	21
11	Engine and gear box width	mm	804	804	0
12	Front bumper to engine distance	mm	525	232	-293
13	Front shock absorber fixing width	mm	739	865	126
14	Bonnet leading edge height	mm	702	840	138
15	Front shock absorber fixing width	mm	1015	976	-39
16	Front bumper to front axle distance	mm	870	546	-324
17	Front axle to 'A' pillar distance	mm	446	382	-64
18	'A' pillar to 'B' pillar distance	mm	1127	1120	-7
19	'B' pillar to rear axle distance	mm	1134	1136	2
20	'B' pillar to 'C' pillar distance	mm	908	910	2
21	Roof sill bottom height	mm	1275	1302	27
22	Roof sill top height	mm	1388	1405	17
23	Floor sill bottom height	mm	185	212	27
24	Floor sill top height	mm	294	321	27

DATA SHEET NO. 13…(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05





DATA SHEET NO. 14
CAMERA LOCATIONS

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

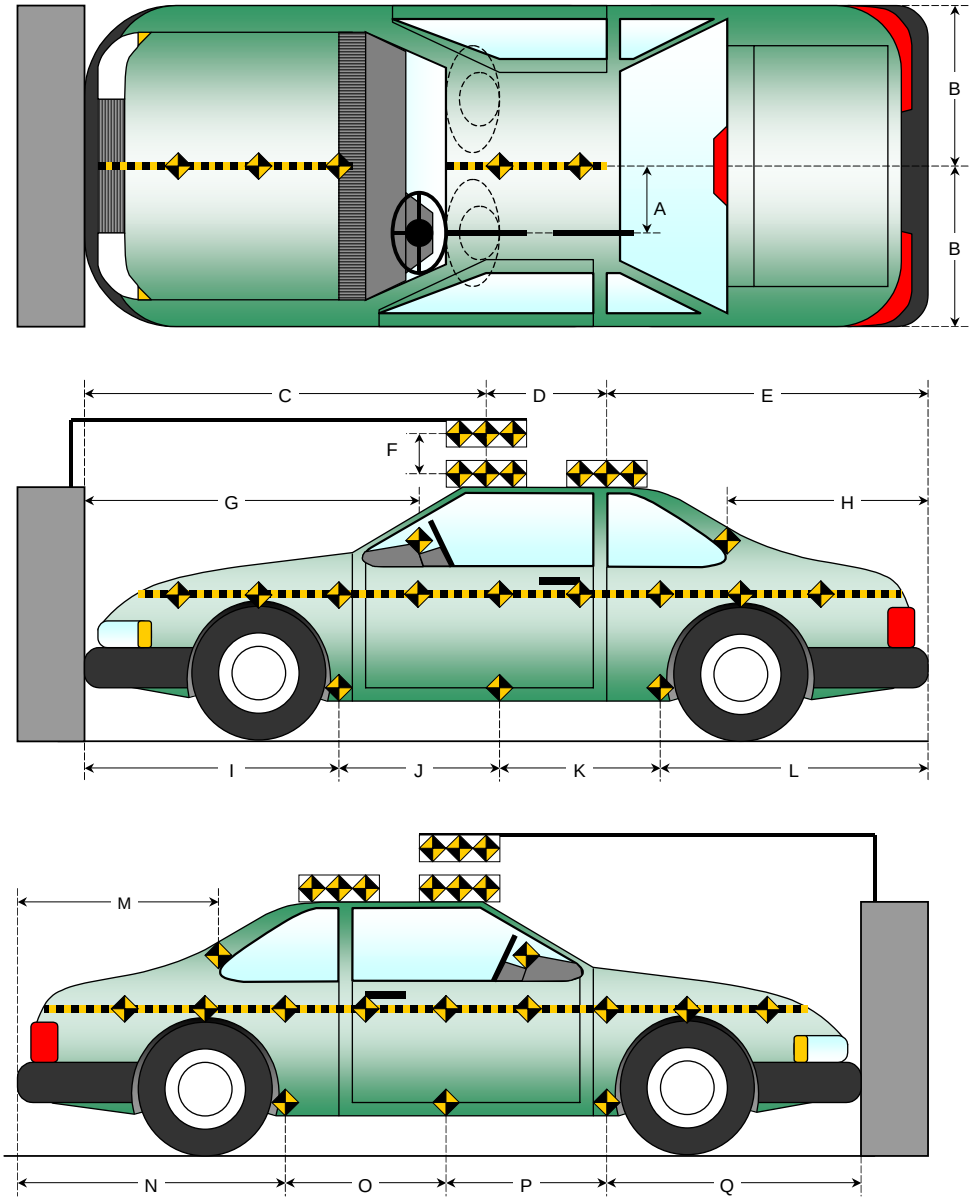
VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location (mm)			Angle (deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-15318	-7899	-1584	-5		Zoom	30
2	Overall Left Side	-1795	-7137	-1127	0	7225	20mm	1000
3	Left Side View	1533	-7126	-1188	-3	7224	50mm	1000
4	Driver and Interior View	-8696	-12562	-4511	-13	13347	50mm	1000
5	Steering Column (Bottom)	-1631	-8244	-2682	-13	8669	35mm	1000
6	Steering Column (Top)	-1663	-8153	-3078	-17	8715	35mm	1000
7	Overall Right Side	-2536	6556	-1066	-2	6642	20mm	1000
8	Right Side View	-1999	6510	-1249	-4	6629	50mm	1000
9	Passenger and Interior View	-5330	9365	-2407	-10	9669	40mm	1000
10	Right Side View	-2006	6967	-1463	-8	7119	25mm	1000
11	Windshield View	-601	0	-5547	-85		25mm	1000
12	Driver Front View	376	-286	-2438	-35		25mm	1000
13	Passenger Front View	371	413	-2439	-35		25mm	1000
14	Pit View of Engine	-823	0	1493	90		12mm	1000
15	Pit View of Fuel Tank	-2905	0	1493	90		8mm	1000
16	Real Time Camera	-2570	3750	-1415	0		Zoom	30
17	Driver & Pass Front View	392	0	-2445	-32		12mm	1000

DATA SHEET NO. 15
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

All Dimensions in (mm)	
Item	Value
A	304
B	1648
C	2054
D	611
E	1882
F	155
G	1666
H	899
I	1332
J	918
K	918
L	1336
M	900
N	1336
O	917
P	917
Q	1332



DATA SHEET NO. 16
VEHICLE INTRUSION MEASUREMENTS

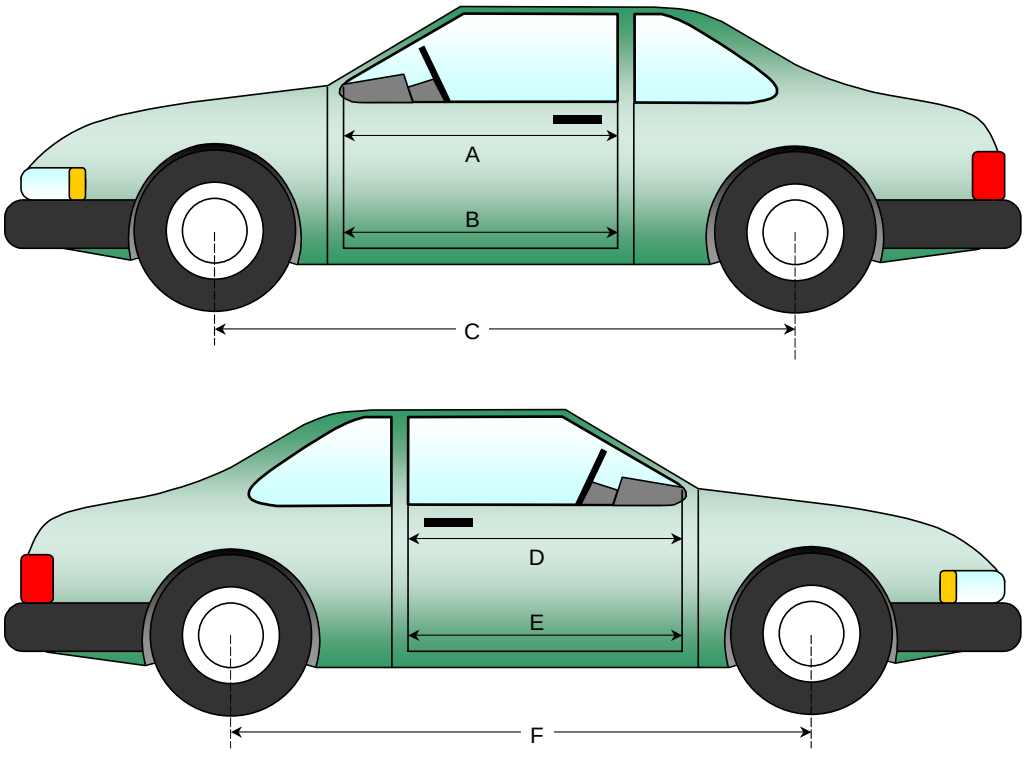
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	928	918	-10
B	Left Side Lower	mm	940	936	-4
D	Right Side Upper	mm	940	940	0
E	Right Side Lower	mm	930	930	0

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	2715	2595	-120
F	Right Side Wheel Base	mm	2715	2570	-145



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

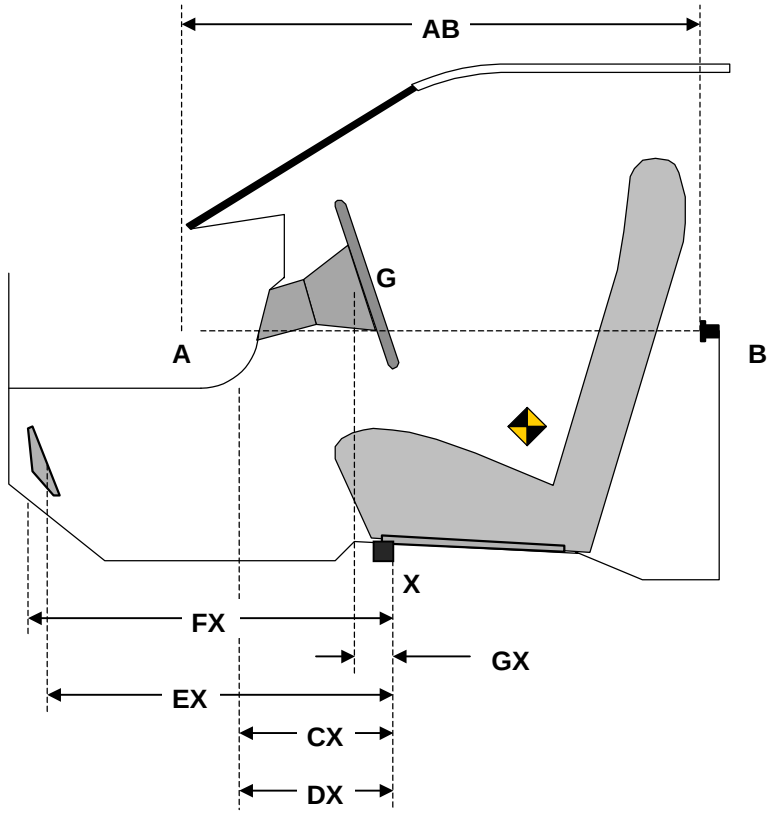
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

DRIVER COMPARTMENT INTRUSION TABLE

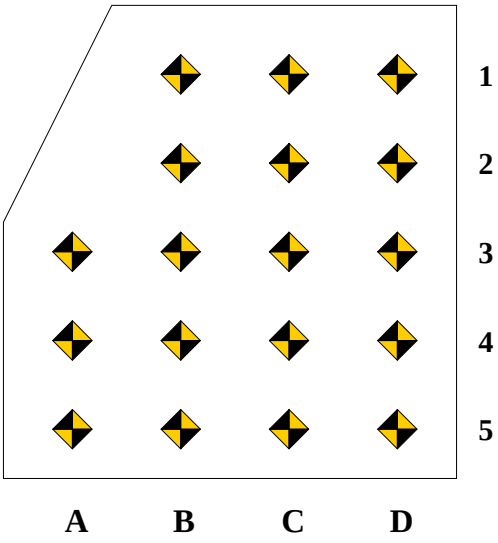
Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	928	918	-10
CX	Left Knee Bolster to X	mm	295	280	-15
DX	Right Knee Bolster to X	mm	236	290	54
EX	Brake Pedal to X	mm	599	536	-63
FX	Foot Rest to X	mm	577	571	-6
GX	Center of Steering Wheel Hub to X	mm	115	137	22

X = Left Front Seat Outboard Anchor Bolt Head



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

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05



Measurement reference point for X and Z-axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		-702	-700	-703		-675	-666	-650		27	34	53
2		-620	-620	-626		-606	-600	-604		14	20	22
3	-519	-520	-518	-521	-520	-521	-513	-512	-1	-1	5	9
4	-427	-420	-417	-414	-428	-420	-416	-412	-1	0	1	2
5	-322	-319	-316	-313	-321	-317	-315	-312	1	2	1	1

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		-5	-8	-9		19	16	20		24	24	29
2		-58	-60	-64		-50	-54	-63		8	6	1
3	-71	-67	-67	-69	-75	-82	-75	-71	-4	-15	-8	-2
4	-77	-66	-66	-66	-81	-90	-85	-76	-4	-24	-19	-10
5	-81	-65	-63	-65	-78	-81	-85	-75	3	-16	-22	-10

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

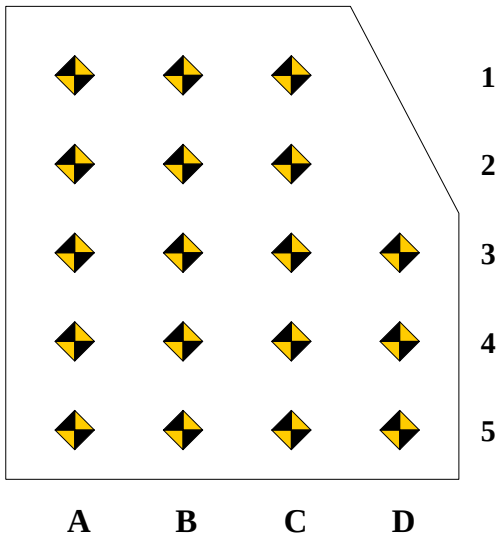
Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-734	-738	-742		-712	-708	-706		22	30	36	
2	-656	-661	-660		-651	-640	-641		5	21	19	
3	-570	-563	-571	-569	-586	-565	-564	-559	-16	-2	7	10
4	-455	-458	-461	-471	-471	-462	-468	-473	-16	-4	-7	-2
5	-357	-364	-368	-375	-391	-383	-378	-375	-34	-19	-10	0

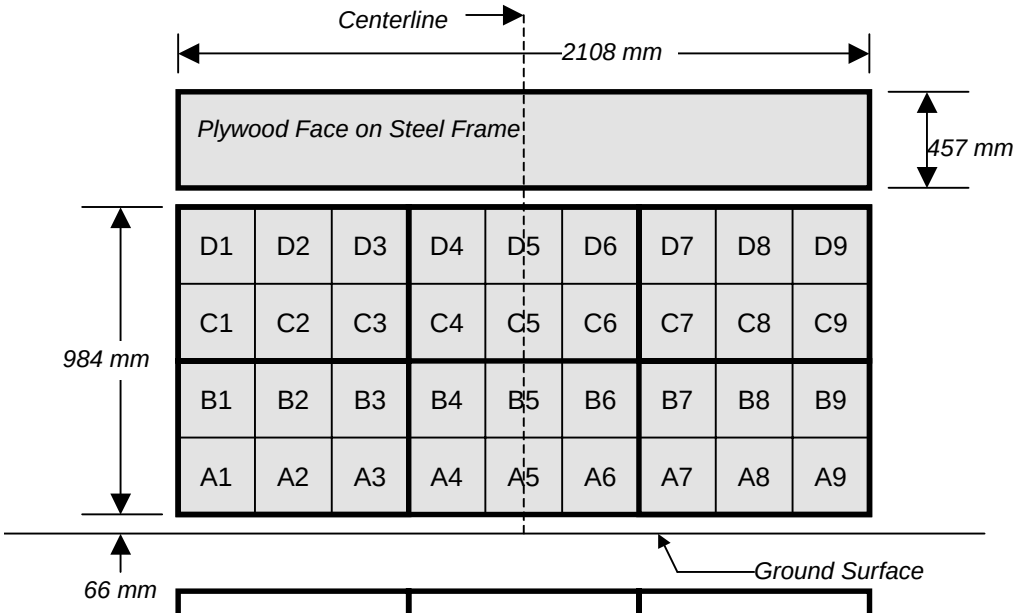
PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	17	20	24		53	60	64		36	40	40	
2	-50	-43	-36		-30	-14	-14		20	29	22	
3	-77	-72	-74	-72	-88	-75	-71	-68	-11	-3	3	4
4	-74	-72	-72	-76	-102	-96	-85	-89	-28	-24	-13	-13
5	-75	-70	-69	-74	-85	-98	-97	-80	-10	-28	-28	-6

DATA SHEET NO. 17
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

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



Group 4 C1 – D3	Group 5 C4 – D6	Group 6 C7 – D9
Group 1 A1 – B3	Group 2 A4 – B6	Group 3 A7 – B9

6 Groups of 6 Load Cells Each

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302
Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05

VEHICLE INFORMATION

VIN: 2HGFA16546H502967 Wheel base (mm): 2715
Vehicle Size Category: 4-Door Test Weight (kg): 1438

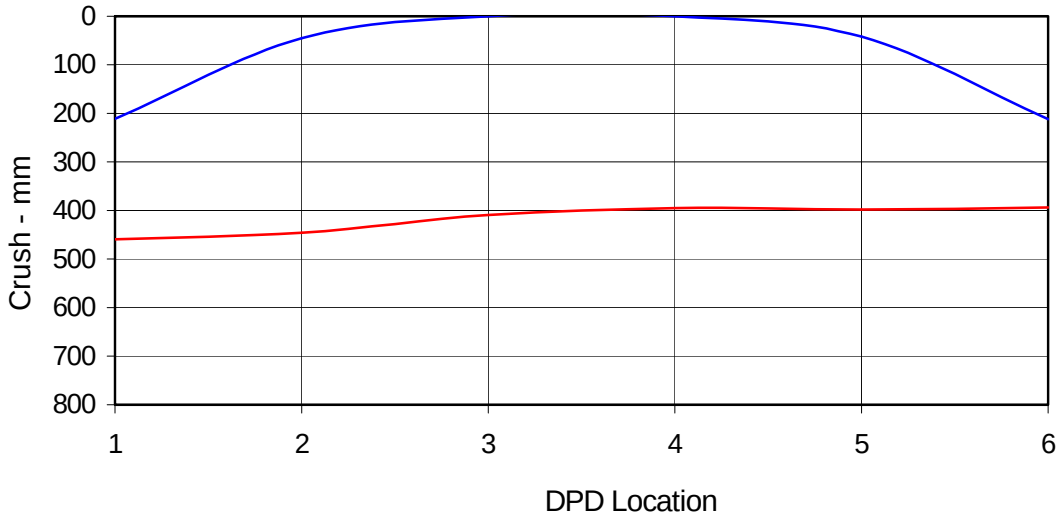
ACCELEROMETER DATA

Accelerometer Location: Left rear cross member
Cal. Procedure/Interval: 6 months / drop test
Integration Algorithm: NHTSA Standard Linearity: Good
Impact Velocity (km/h): 56.16
Velocity Change (km/h): 64.3 Time of Separation (msec): 89.7

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
Damage Region Length (mm): 1745 Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	211	459	-248
C2	Crush zone 2 on left side	mm	45	446	-401
C3	Crush zone 3 on left side	mm	0	409	-409
C4	Crush zone 4 on right side	mm	0	395	-395
C5	Crush zone 5 on right side	mm	42	398	-356
C6	Crush zone 6 at right side	mm	212	394	-182

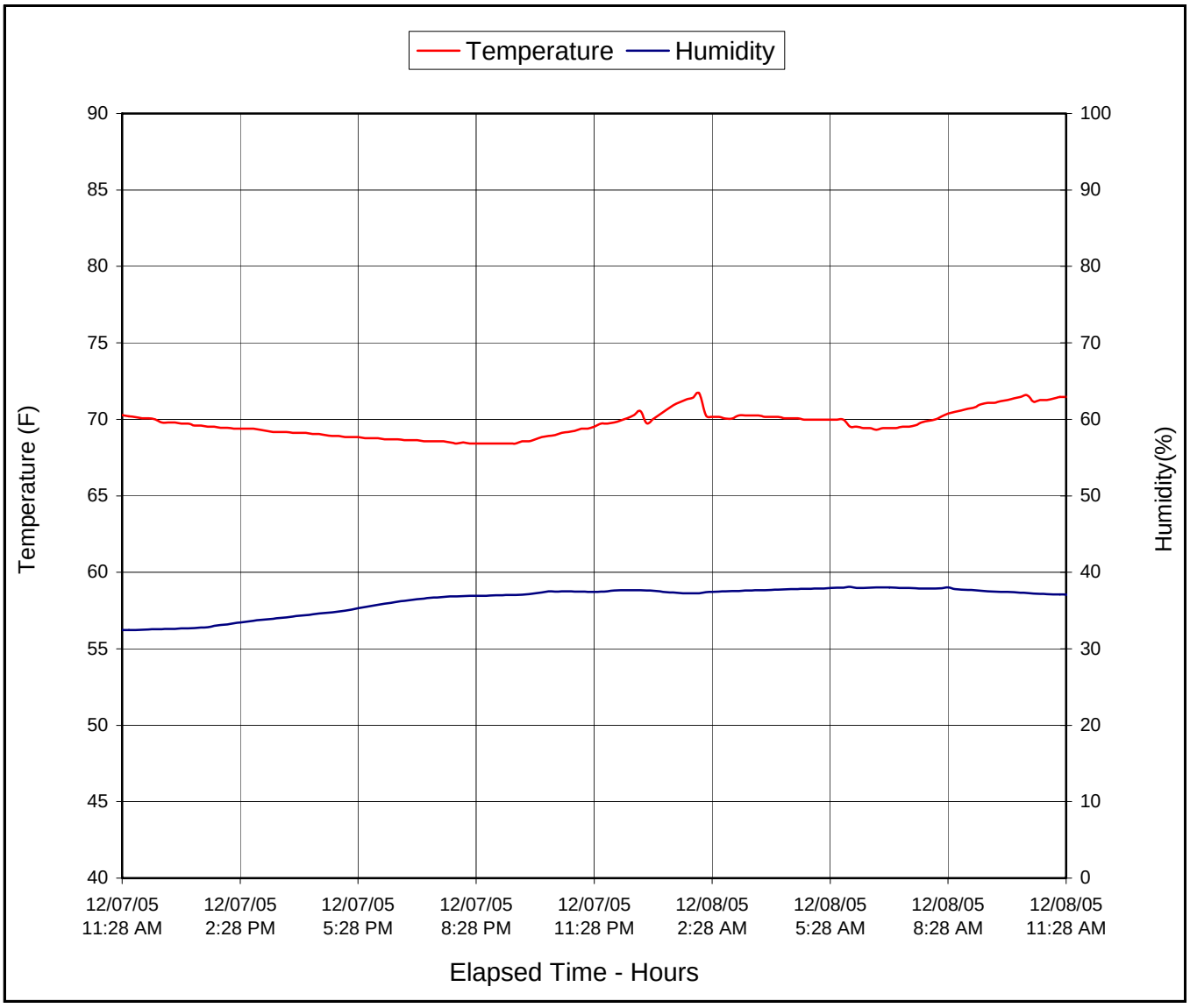


DATA SHEET NO. 19

DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2006 Honda Civic LX 4-Door Sedan NHTSA No.: M65302

Test Program: 2006 NHTSA 35mph NCAP Test Date: 12/08/05



APPENDIX A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure		Page
A-1	Load Cell Location	A-1
A-2	Manufacturer's Label	A-2
A-3	Tire Placard	A-3
A-4	Right Front ¾ View, As Received	A-4
A-5	Left Rear ¾ View, As Received	A-5
A-6	Pre-Test Front View	A-6
A-7	Post-Test Front View (Vehicle Moved)	A-7
A-8	Pre-Test Left Side View	A-8
A-9	Post-Test Left Side View	A-9
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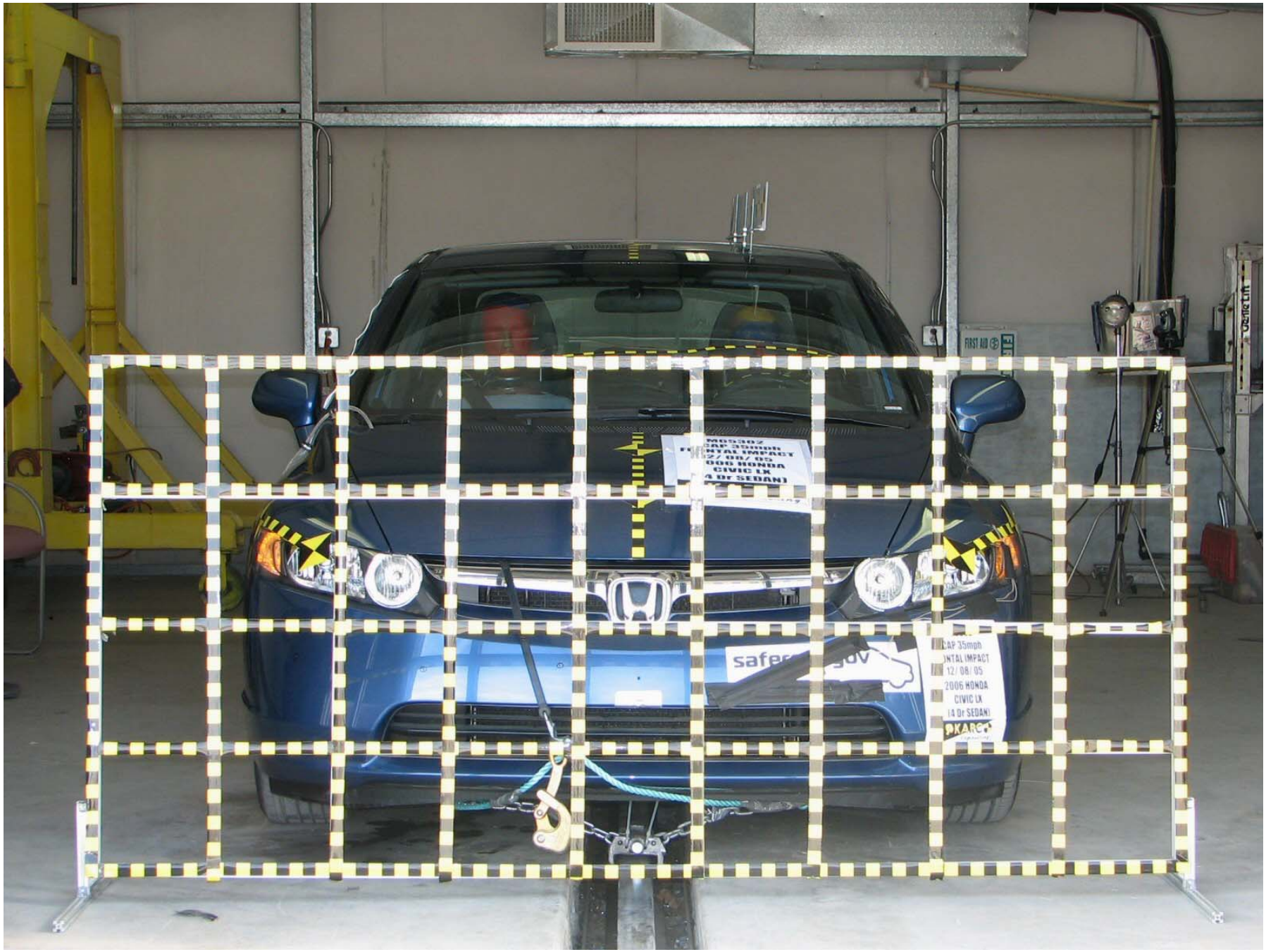

Figure A-1: Load Cell Location

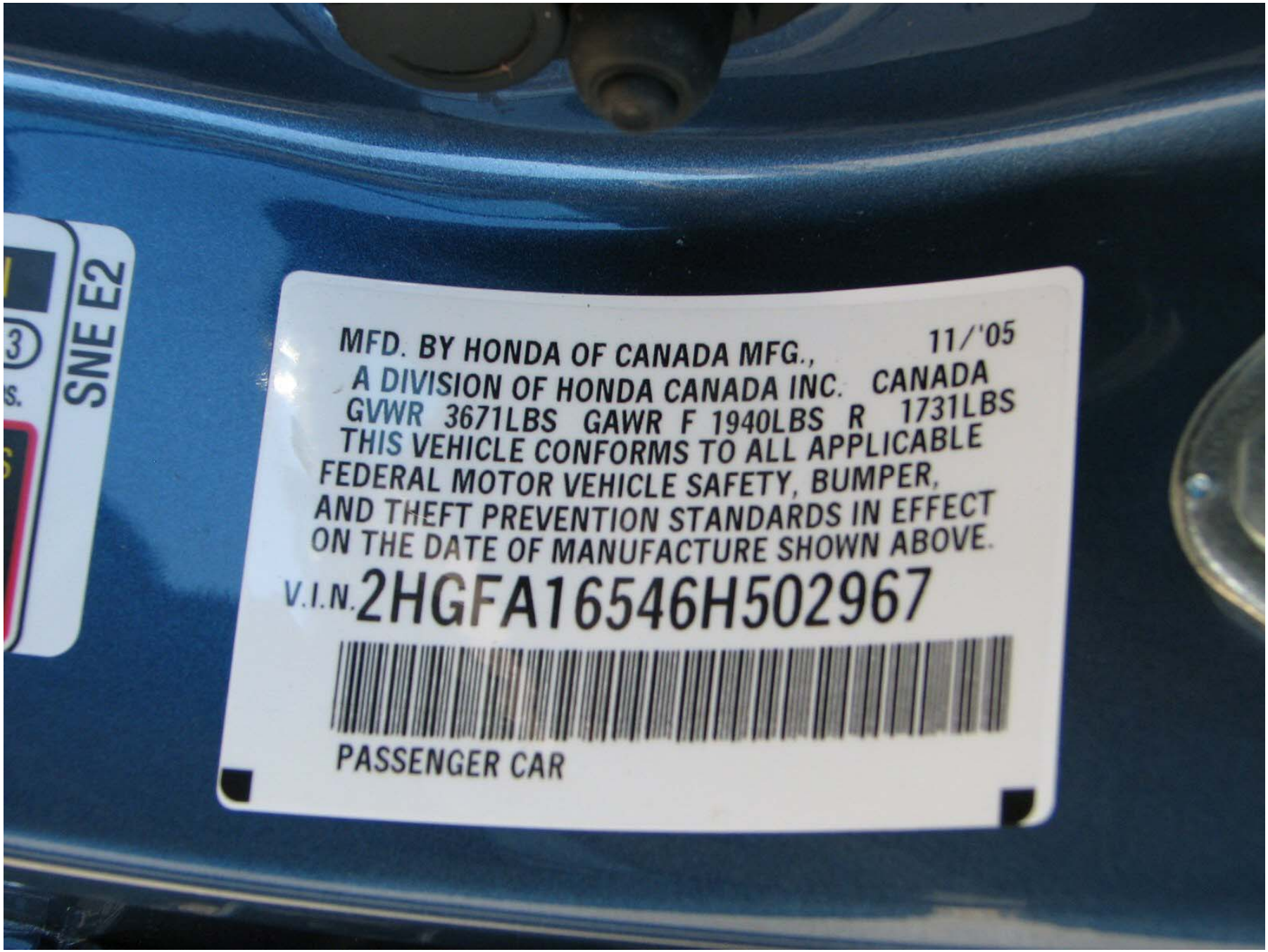

Figure A-2: Manufacturer's Label

Figure A-3: Tire Placard

Figure A-4: Right Front ¾ View, As Received

Figure A-5: Left Rear ¾ View, as Received

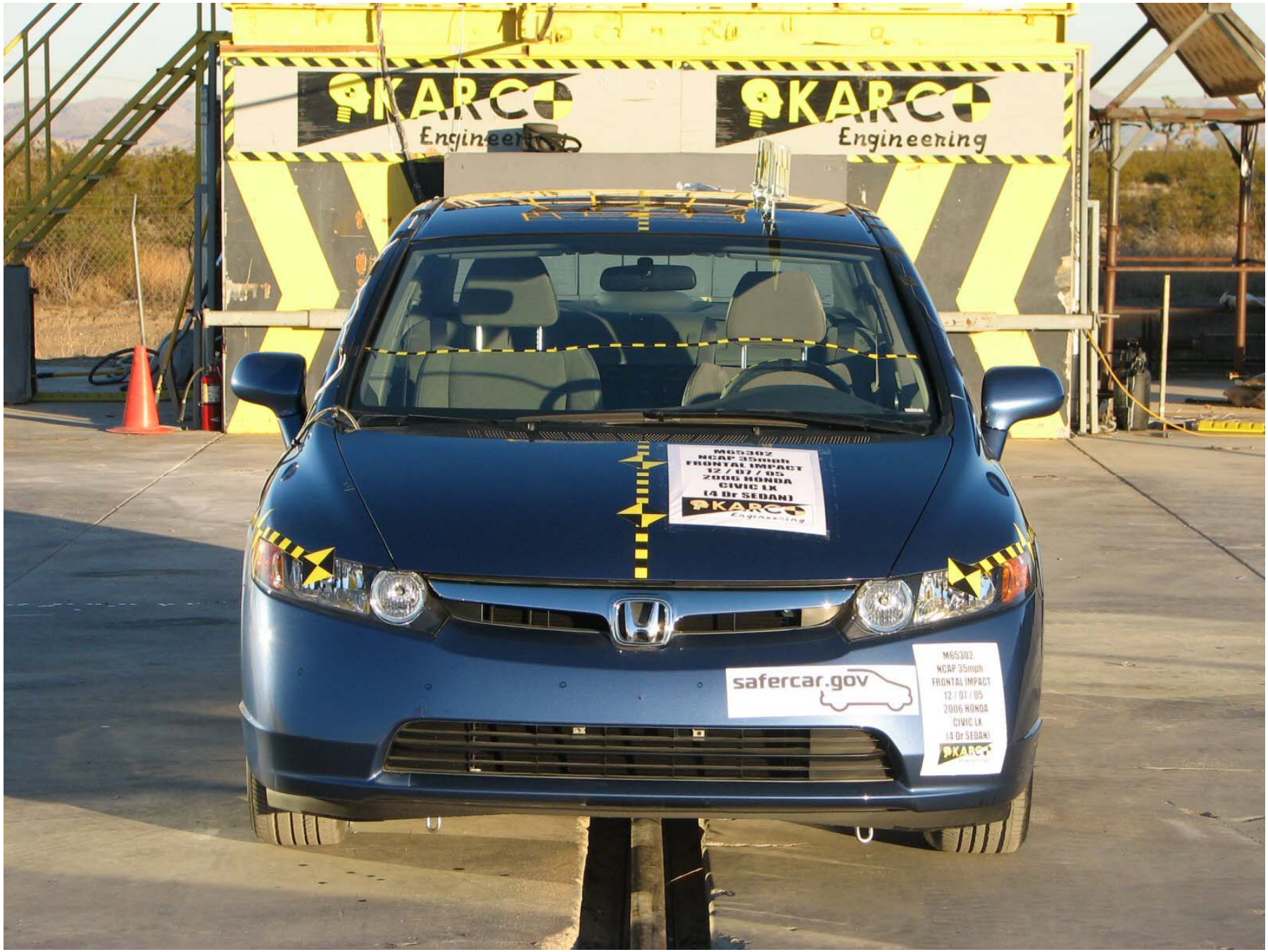

Figure A-6: Pre-Test Front View

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

Figure A-10: Pre-Test Right Side View

Figure A-11: Post-Test Right Side View

Figure A-12: Pre-Test Right Front ¾ View

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

Figure A-14: Pre-Test Left Rear ¾ View

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

Figure A-16: Post-Test Left Side ¾ View of Doors After Impact

Figure A-17: Post-Test Right Side ¾ View of Doors After Impact

Figure A-18: Pre-Test Windshield

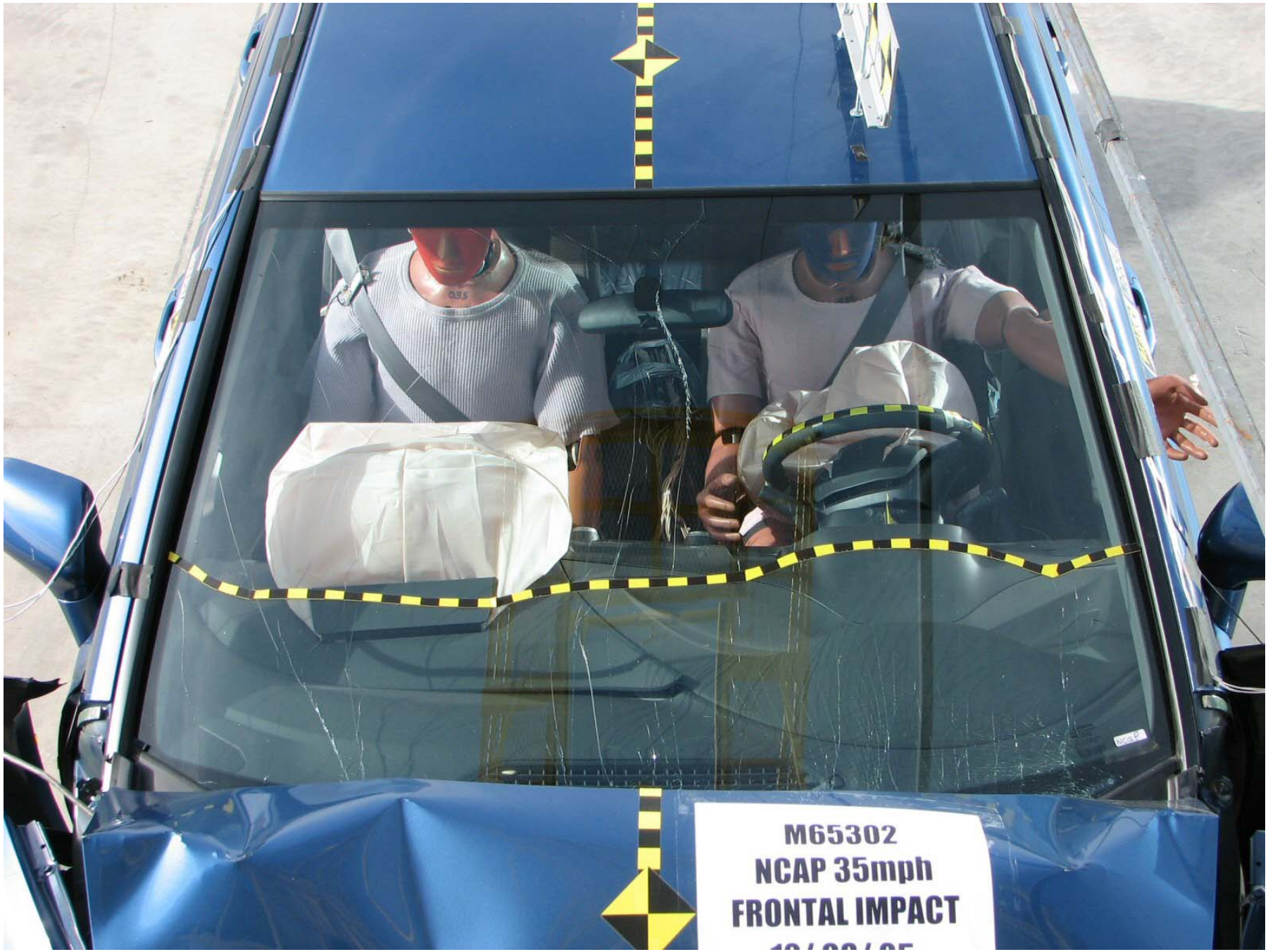

Figure A-19: Post-Test Windshield

Figure A-20: Pre-Test Engine Compartment

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

Figure A-22: Pre-Test Fuel Cap

Figure A-23: Post-Test Fuel Cap

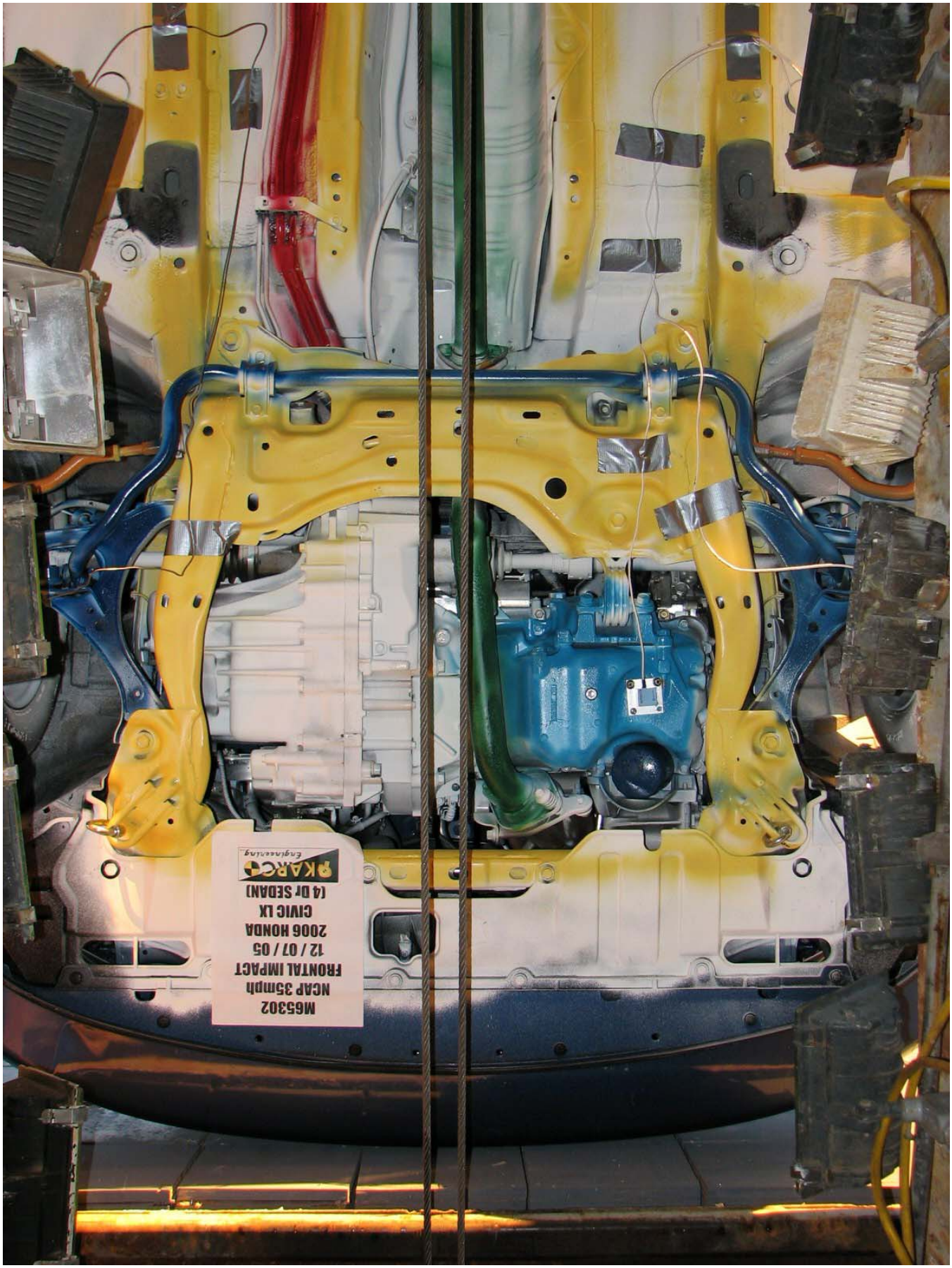

Figure A-24: Pre-Test Front Underbody

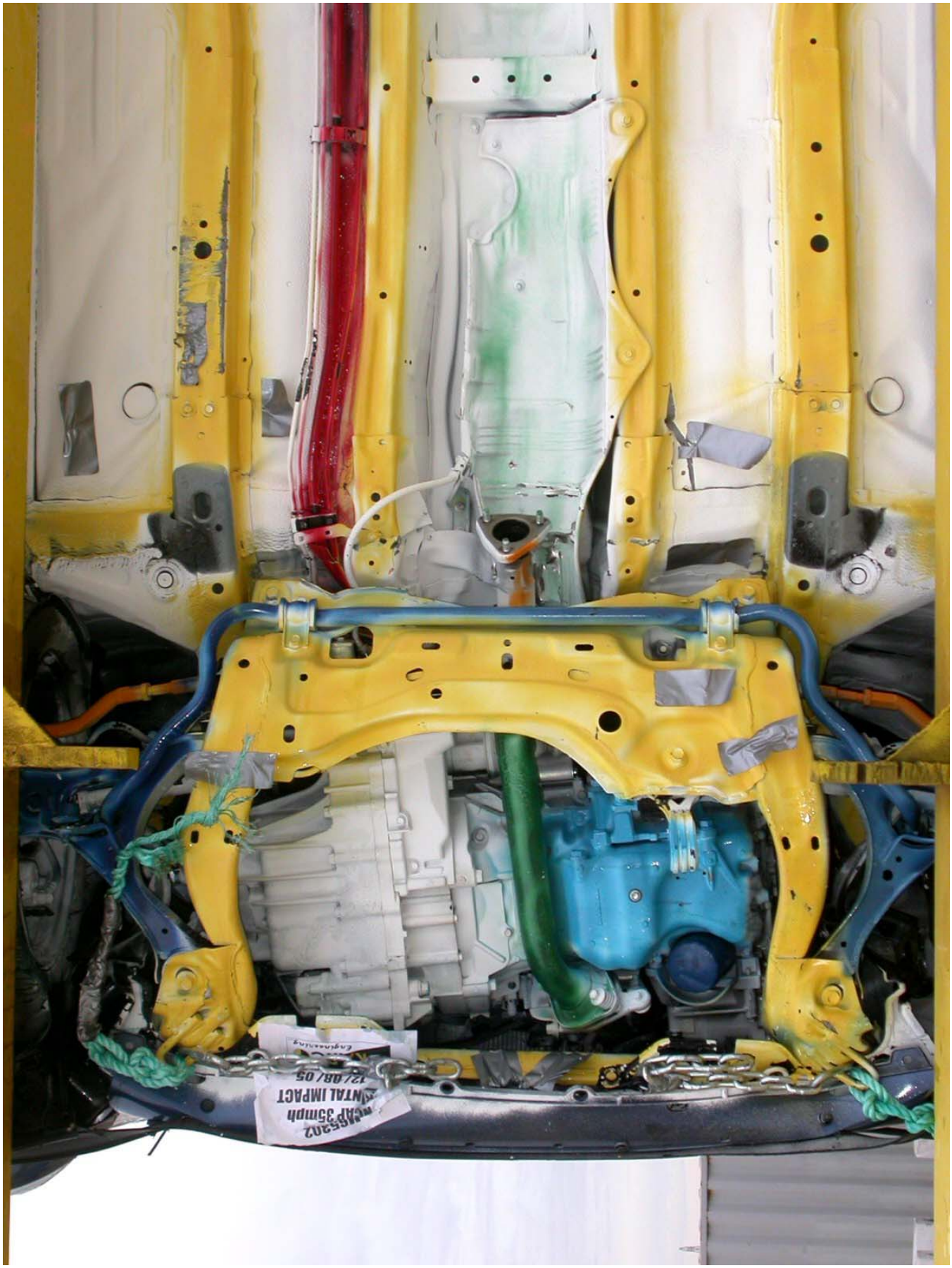

Figure A-25: Post-Test Front Underbody

Figure A-26: Pre-Test Mid Underbody

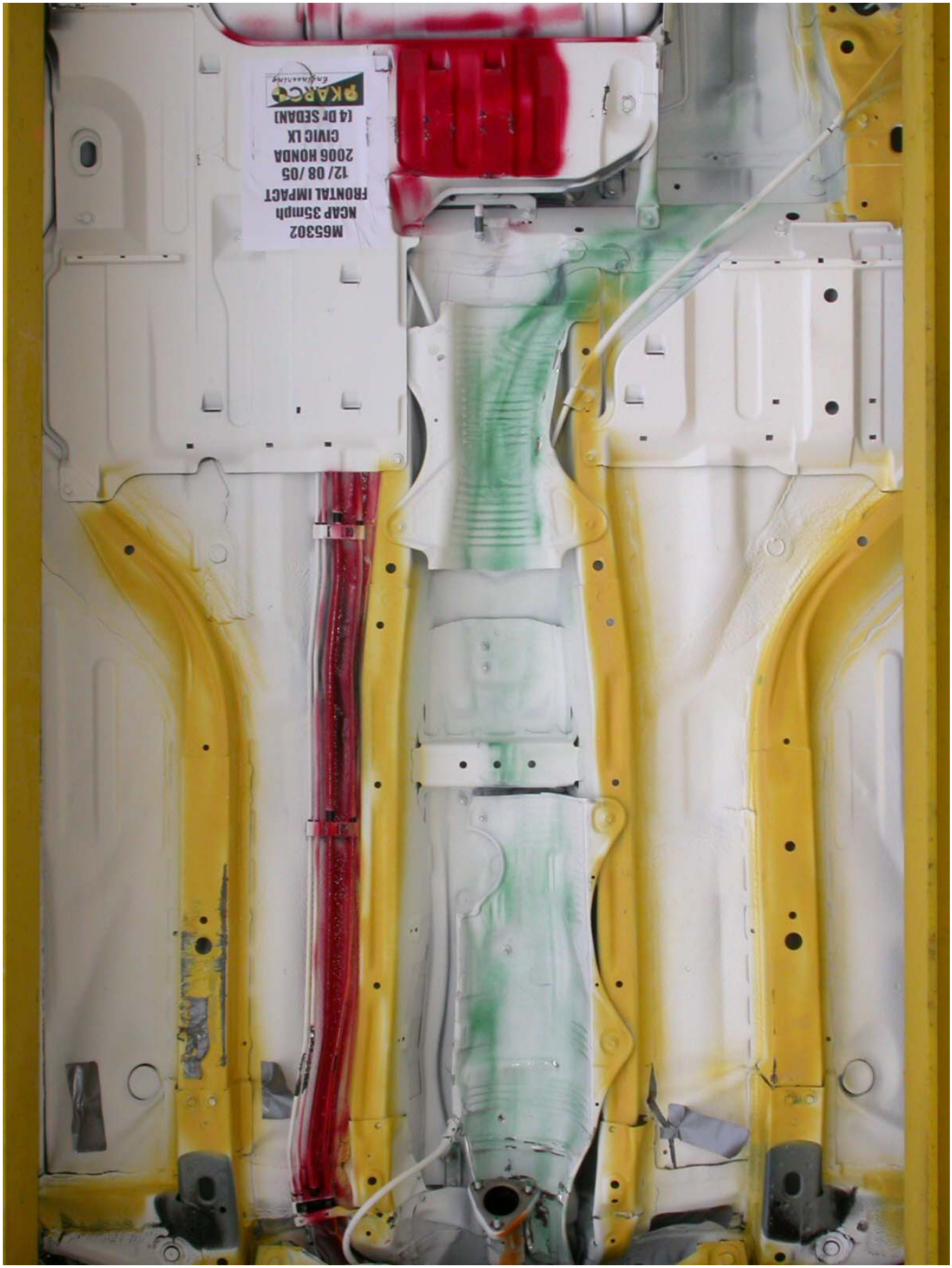

Figure A-27: Post-Test Mid Underbody

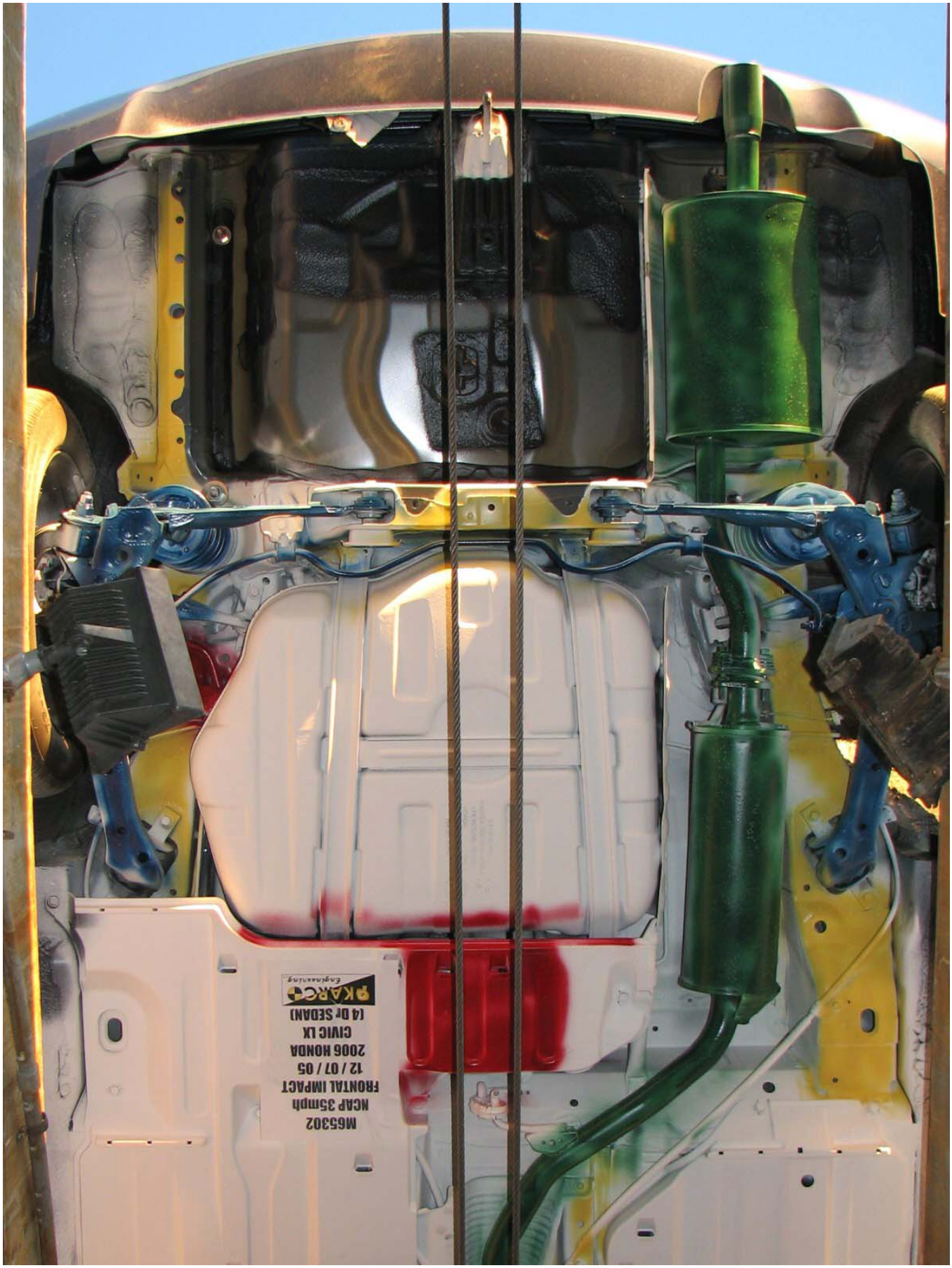

Figure A-28: Pre-Test Rear Underbody

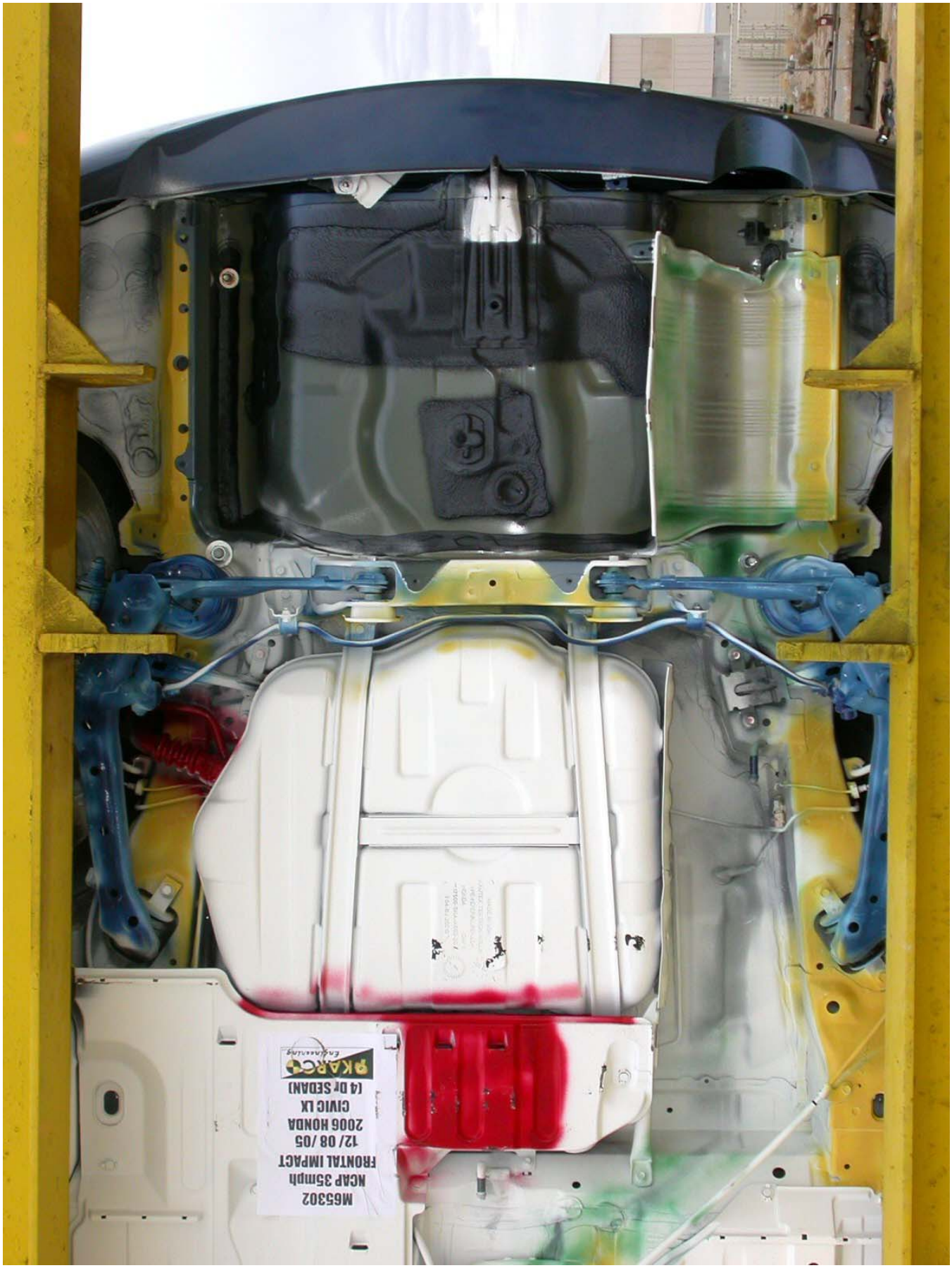

Figure A-29: Post-Test Rear Underbody

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)

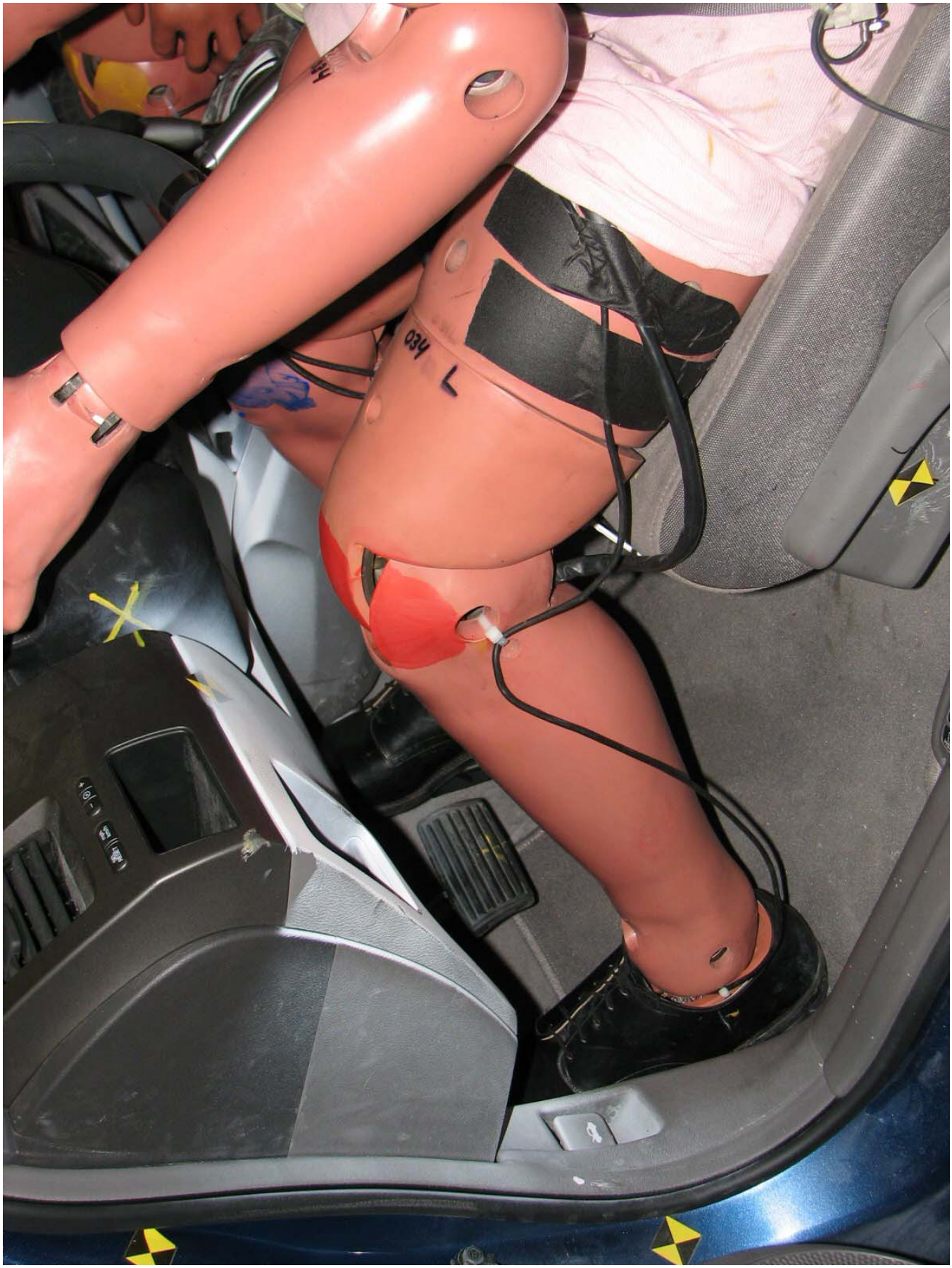

Figure A-36: Pre-Test Driver Dummy Feet

Figure A-37: Post-Test Driver Dummy Feet

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

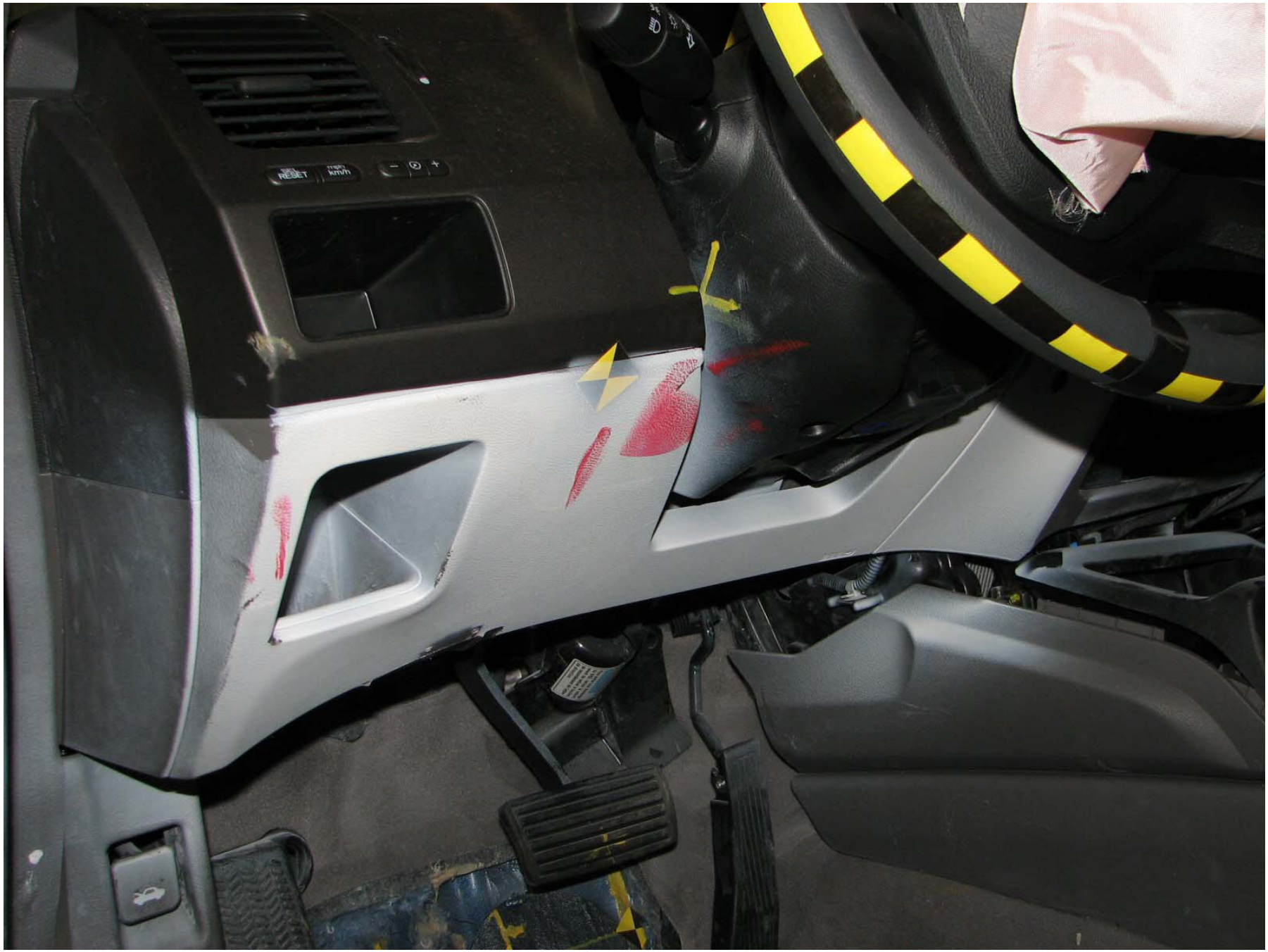

Figure A-39: Post-Test Driver Side Knee Bolster

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

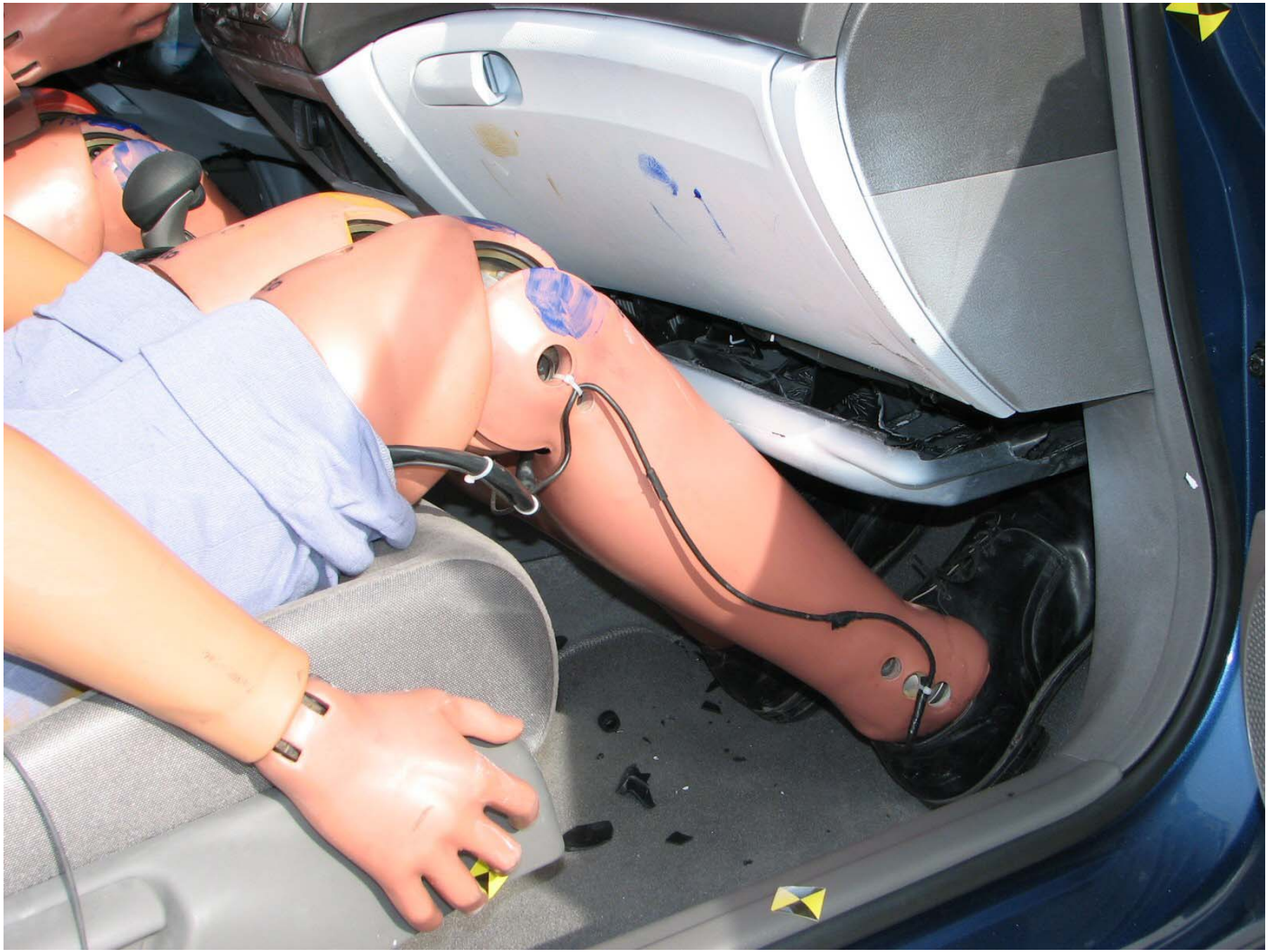

Figure A-51: Post-Test Passenger Dummy Feet

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

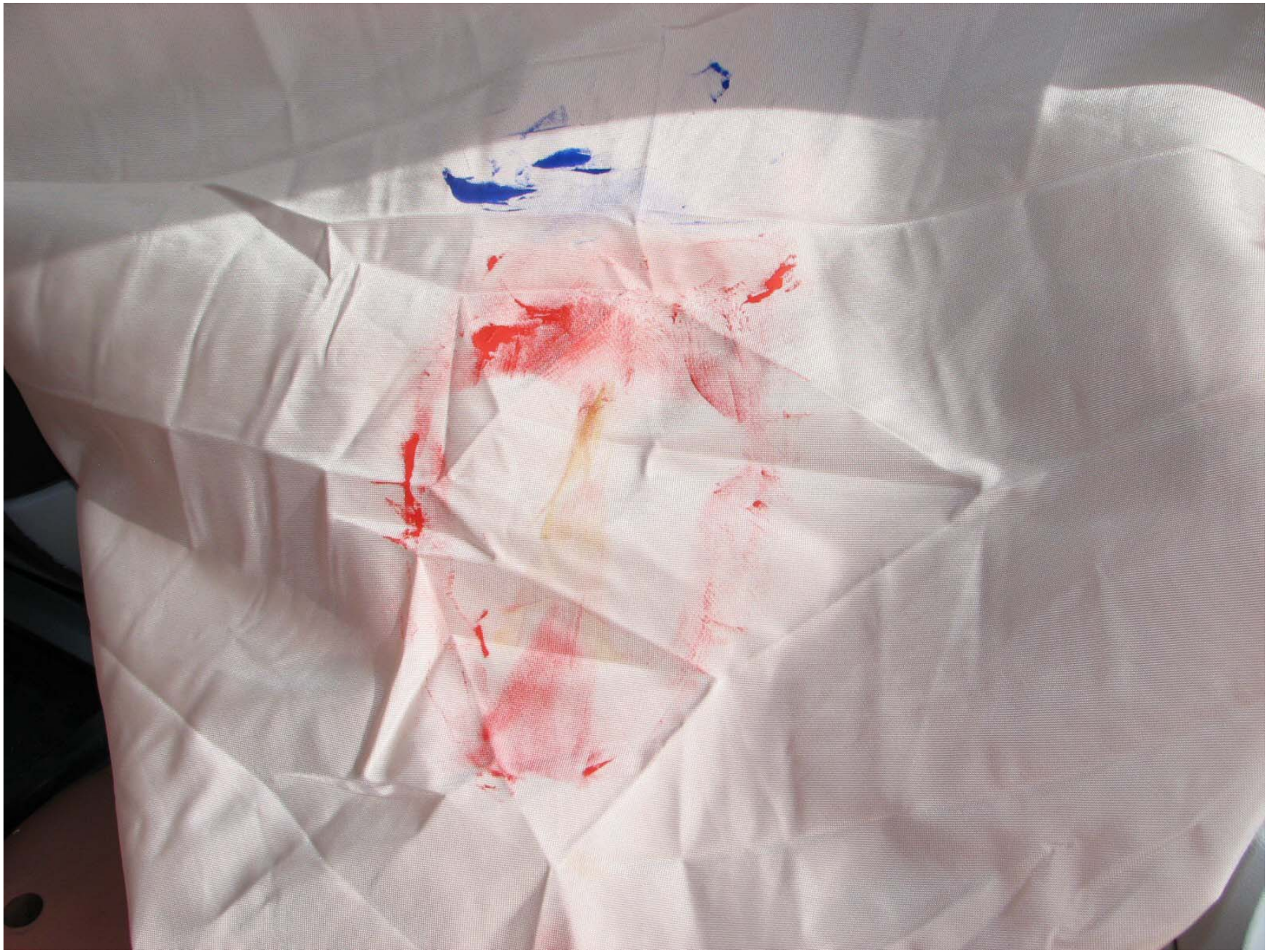

Figure A-57: Post-Test Passenger Dummy Airbag Contact

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

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

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

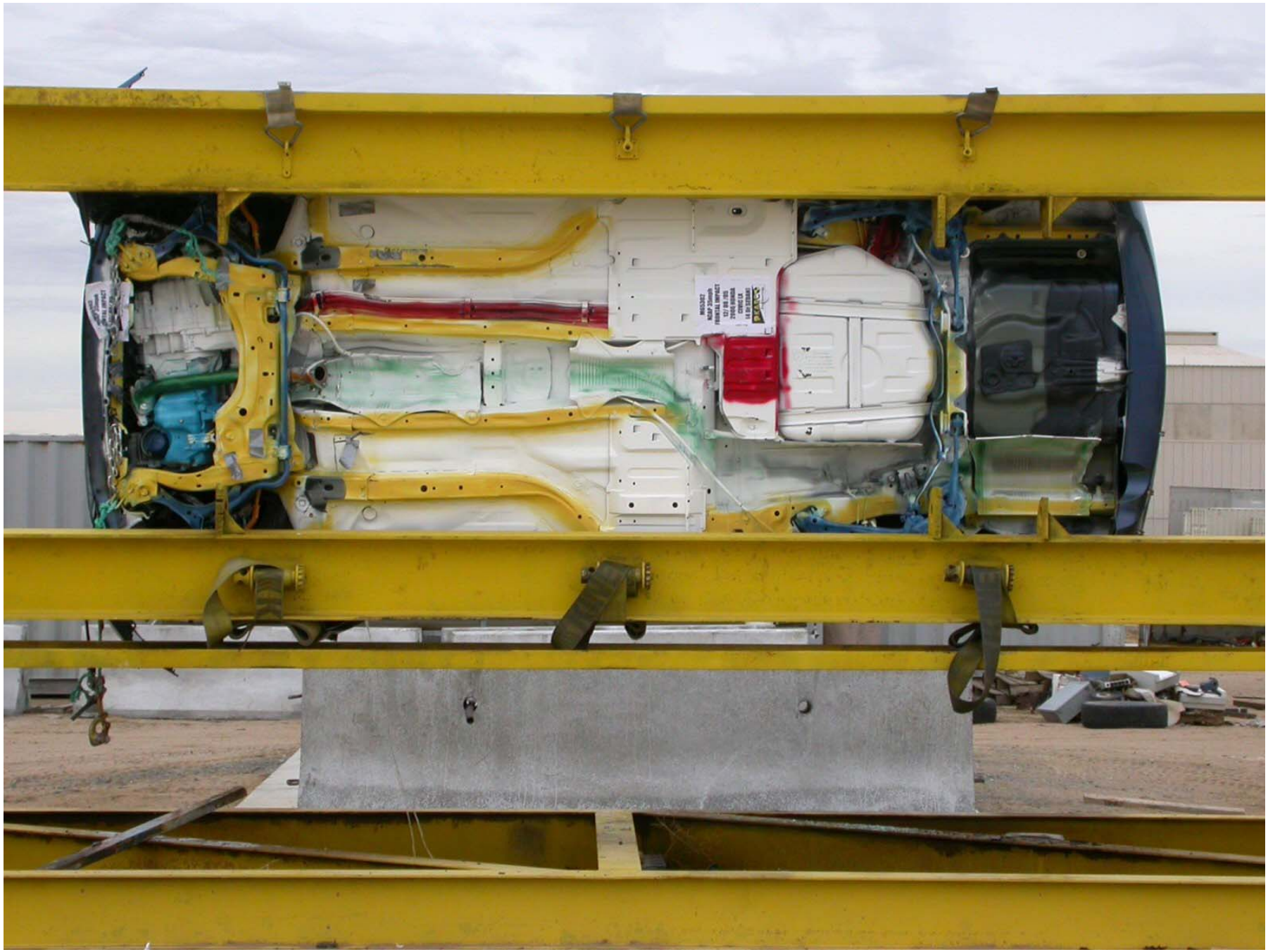

Figure A-61: Vehicle on Rollover Device (270°)

Figure A-62: Vehicle Impact

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

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	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
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	Passenger Head Primary Y	B-4
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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.

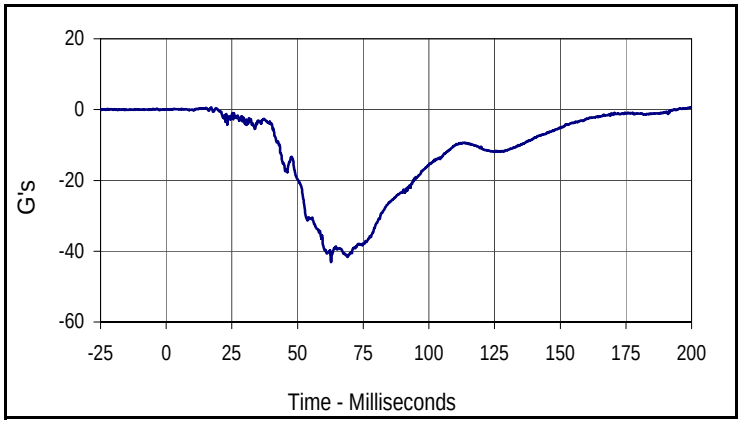
Driver Head Primary X Velocity
Driver Head Primary X Displacement
Driver Head Redundant X
Driver Head Redundant Y
Driver Head Redundant Z
Driver Head Resultant Redundant
Driver Head Redundant X Velocity
Driver Head Redundant X Displacement
Driver Upper Neck Force X
Driver Upper Neck Force Y
Driver Upper 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

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

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
Passenger Pelvis X
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

Vehicle Left Rear X Displacement
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:	2006 Honda Civic LX 4-Door Sedan	Test Date:	12/8/05
Test Program:	2006 NHTSA 35mph NCAP	NHTSA No.:	M65302



Curve Description			
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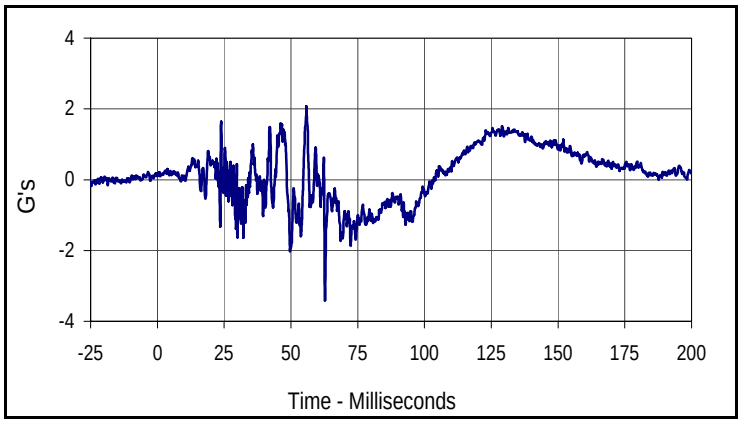

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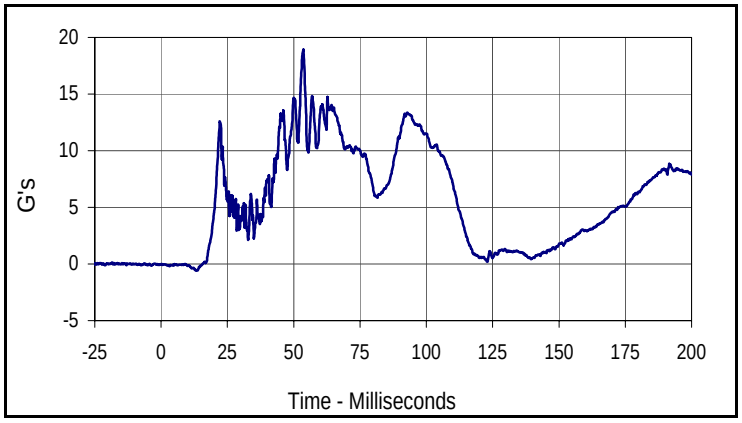

Curve Description			
Driver Head Primary Z			
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Max	Time	Min	Time
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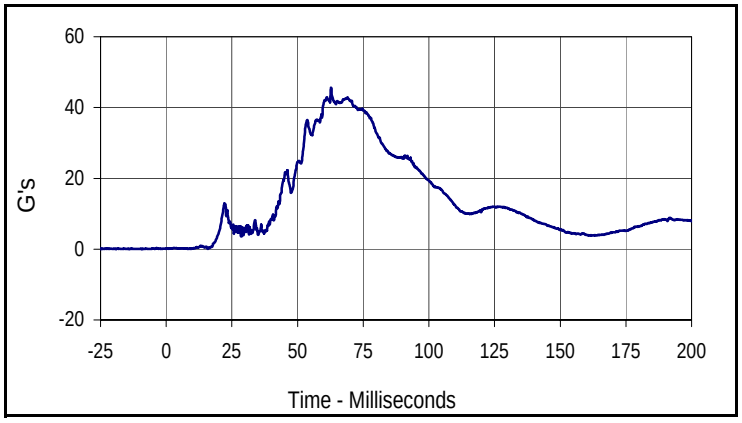
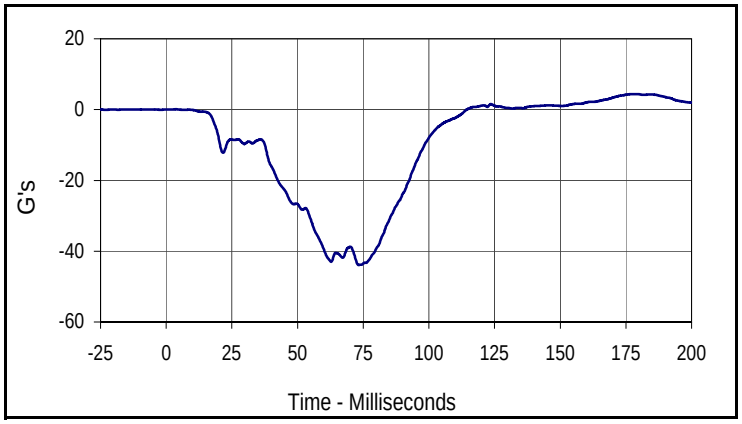


Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
45.6	62.7	0.1	8.1

Test Vehicle:	2006 Honda Civic LX 4-Door Sedan	Test Date:	12/8/05
Test Program:	2006 NHTSA 35mph NCAP	NHTSA No.:	M65302



Curve Description			
Driver Chest Primary X			
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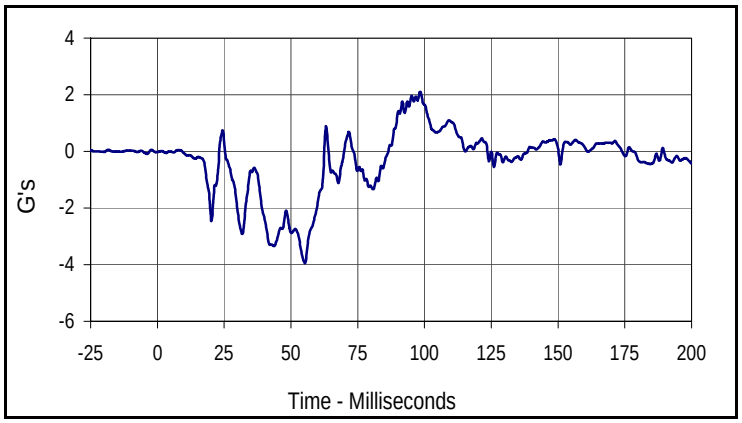
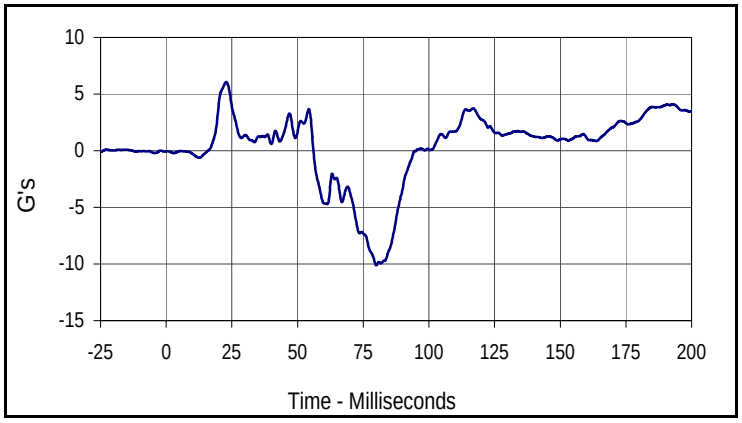
Max	Time	Min	Time
4.4	179.7	-43.9	73.3



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
2.1	98.4	-3.9	55.2



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Driver Chest Primary Z			
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006	FIL	180	G's
Max	Time	Min	Time
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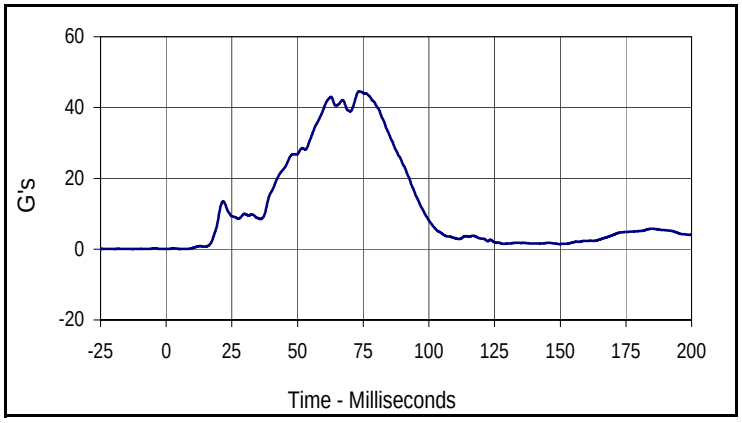

Curve Description			
Driver Chest Resultant Primary			
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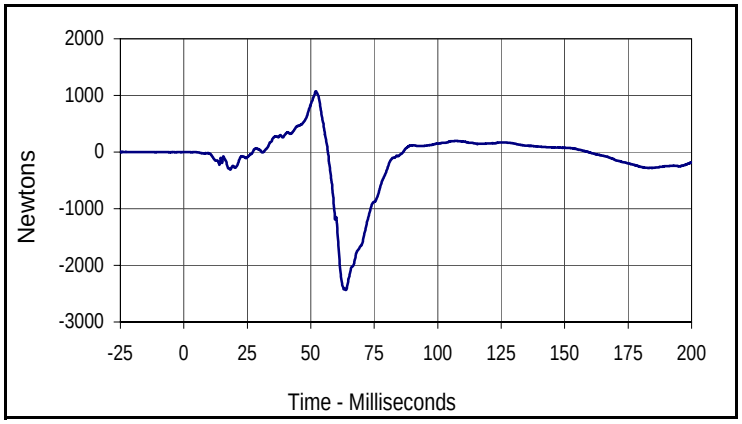
44.5	73.3	0.0	5.2

Test Vehicle:	2006 Honda Civic LX 4-Door Sedan	Test Date:	12/8/05
Test Program:	2006 NHTSA 35mph NCAP	NHTSA No.:	M65302



Curve Description			
Driver Left Femur Force Z			
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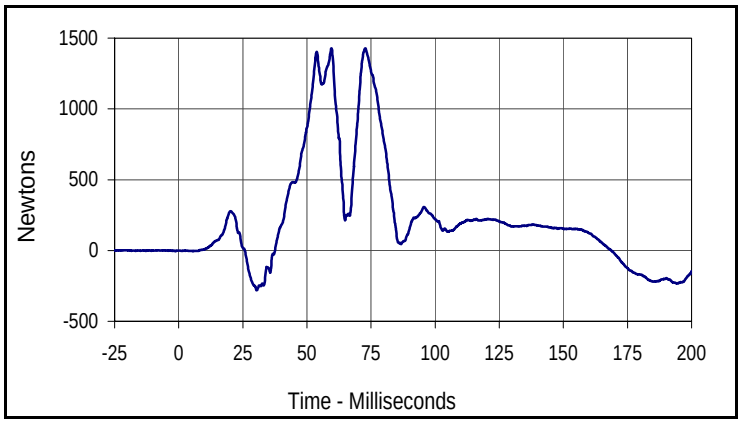
007	FIL	600	Newtons
Max	Time	Min	Time
1075.1	52.0	-2436.2	63.9



Curve Description			
Driver Right Femur Force Z			
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008	FIL	600	Newtons
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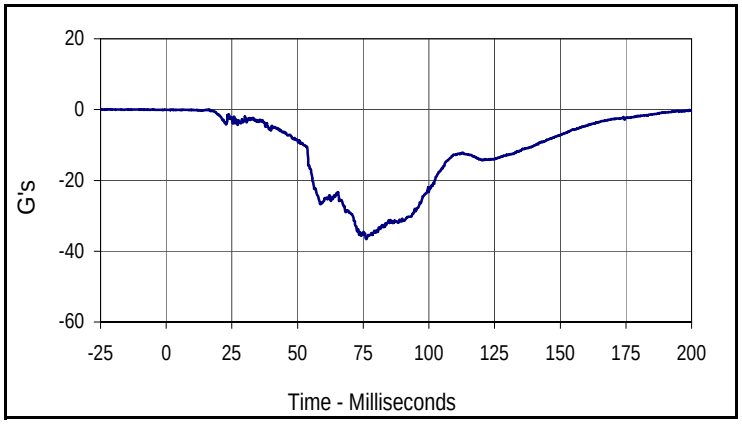
1428.8	59.5	-280.2	30.4



Curve Description			
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Max	Time	Min	Time
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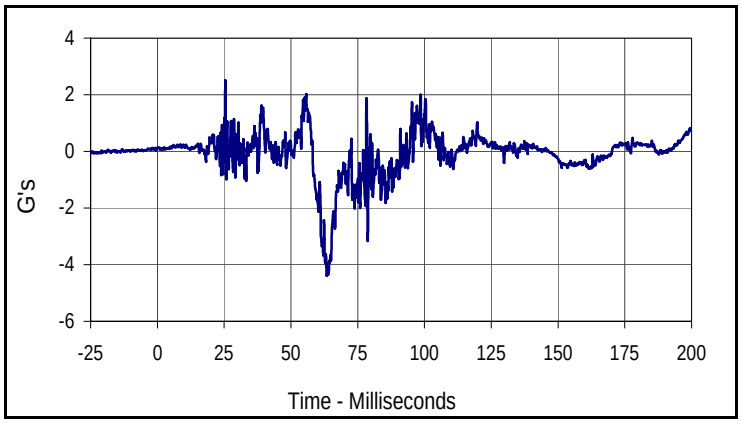

Curve Description			
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010	FIL	1000	G's
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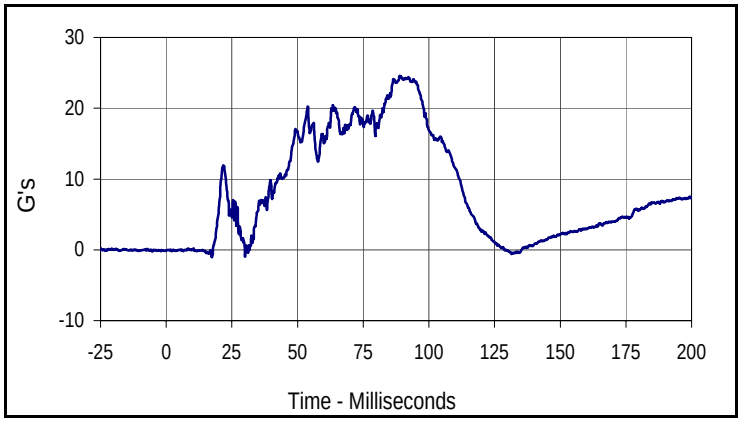

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Max	Time	Min	Time
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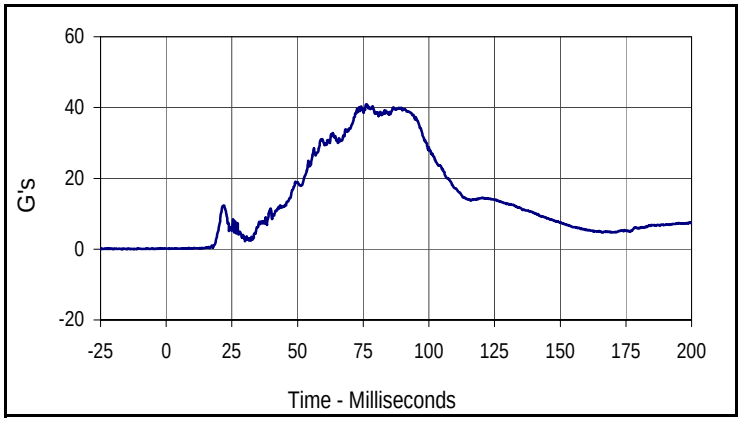
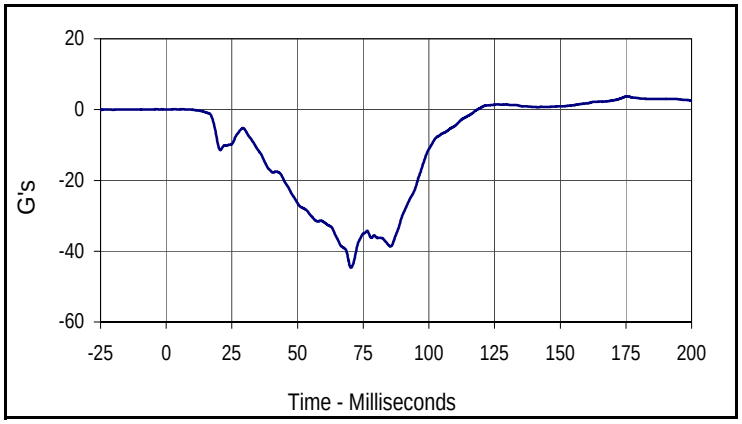
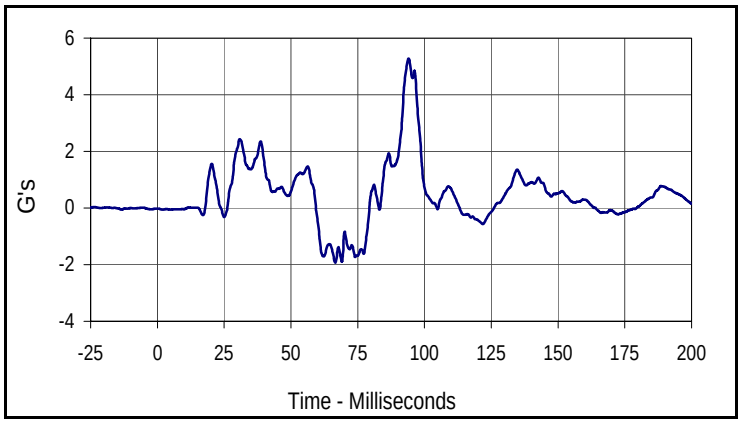


Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
40.9	76.2	0.1	1.1

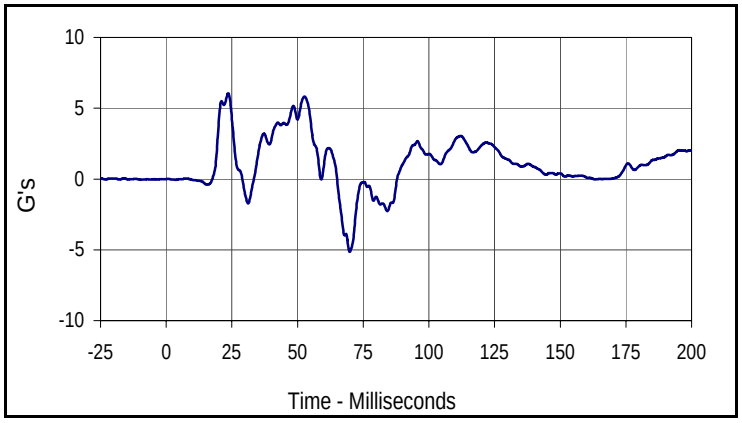
Test Vehicle:	2006 Honda Civic LX 4-Door Sedan	Test Date:	12/8/05
Test Program:	2006 NHTSA 35mph NCAP	NHTSA No.:	M65302



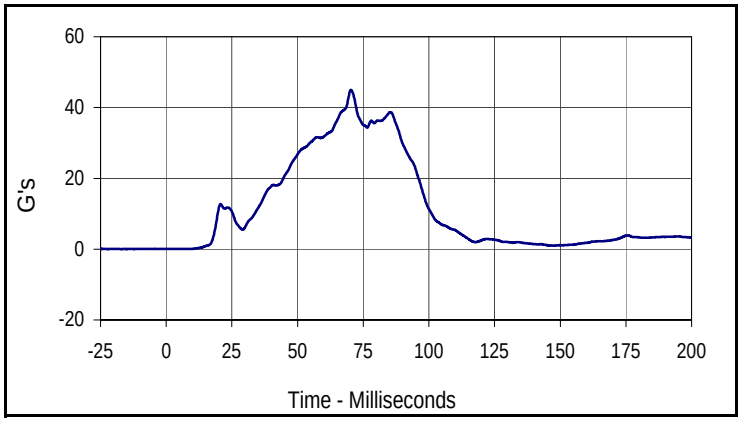
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
3.7	175.6	-44.7	70.3



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
5.3	94.0	-1.9	66.6

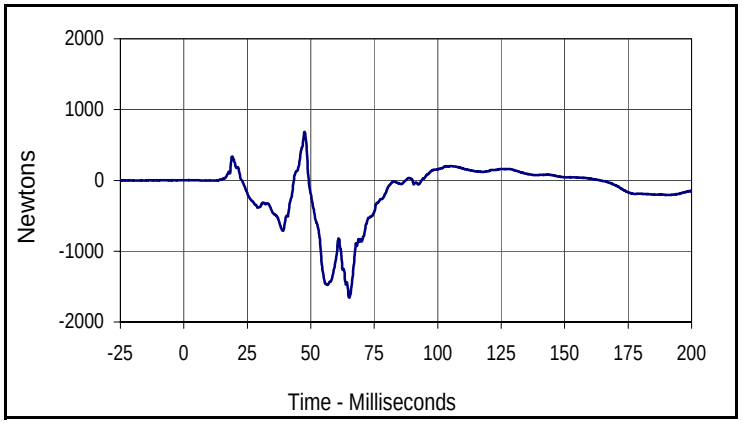


Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
6.0	23.6	-5.1	69.8

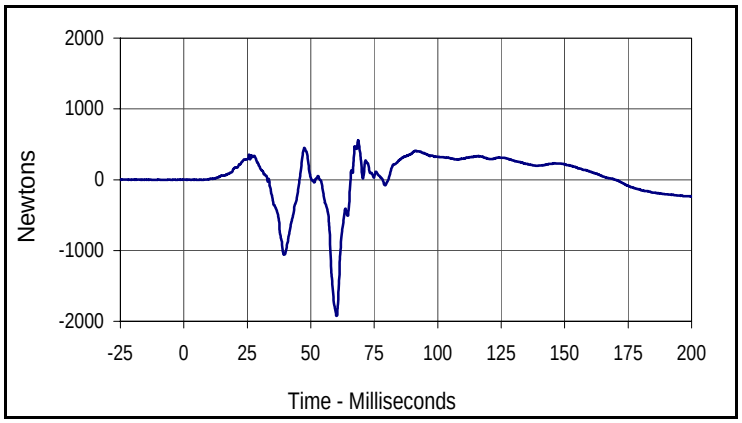


Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
45.0	70.3	0.0	9.1

Test Vehicle:	2006 Honda Civic LX 4-Door Sedan	Test Date:	12/8/05
Test Program:	2006 NHTSA 35mph NCAP	NHTSA No.:	M65302



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
684.5	47.5	-1656.1	65.1



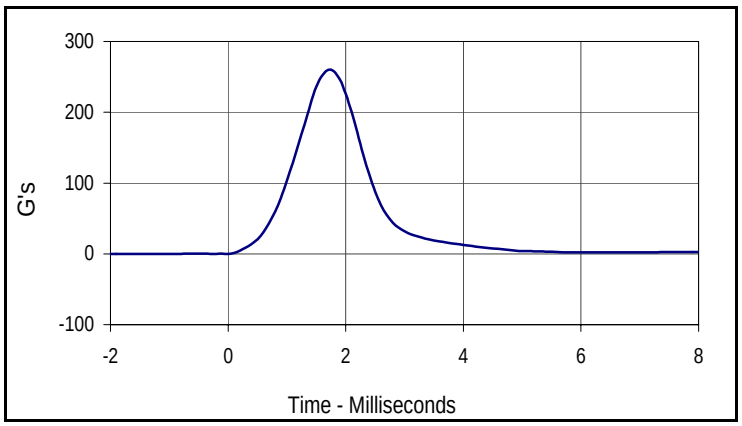
Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
557.9	68.6	-1924.5	60.2

APPENDIX C

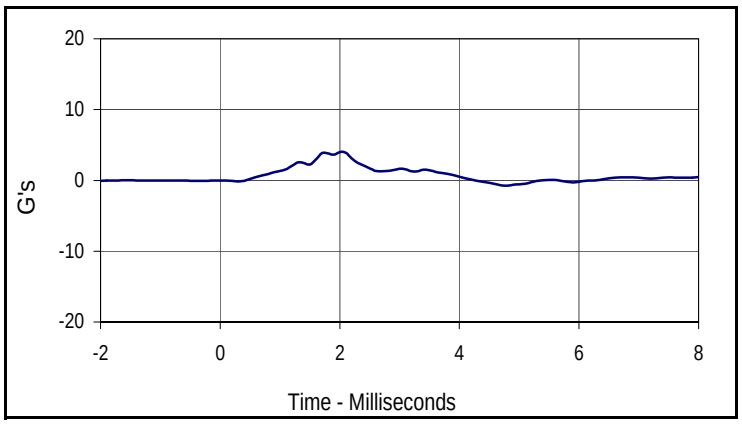
DUMMY CALIBRATION DATA

Test Program:	Hybrid III 50th Percentile Male Head Drop Test	Test Date:	12/3/05
ATD Serial No.:	034	Test I.D.:	HD12A

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	259.9	Pass
Peak Lateral Acceleration	G's	≤15.0	4.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass



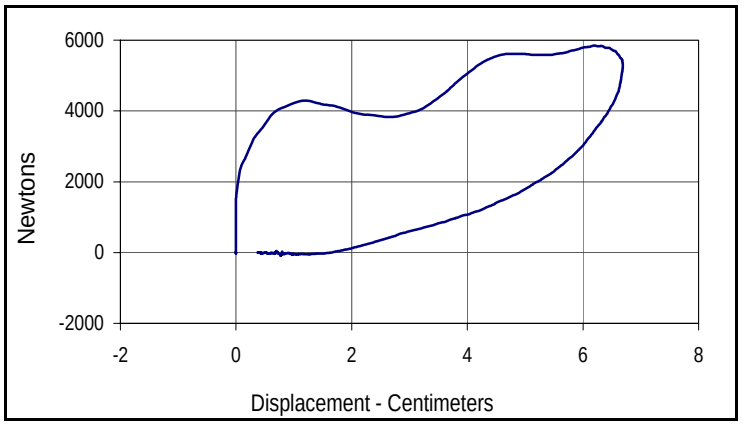
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
259.9	1.7	0.0	-1.4



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.0	2.0	-0.7	4.8

Test Program:	Hybrid III 50th Percentile Male Thorax Impact Test	Test Date:	124/05
ATD Serial No.:	034	Test I.D.:	CH12A

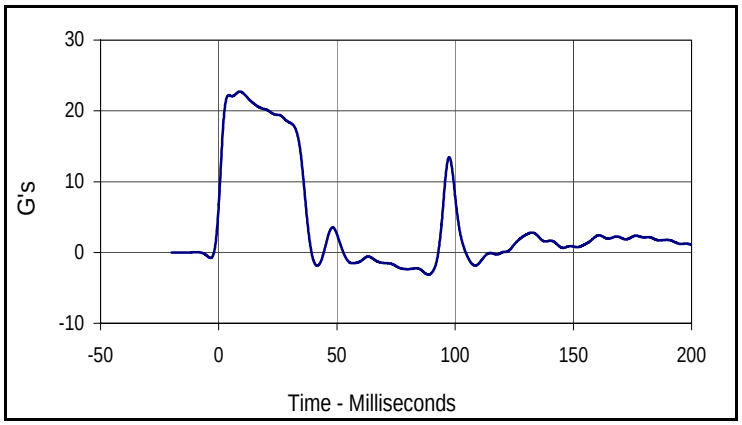
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.70	Pass
Peak Probe Force	Newtons	5159 to 5893	5846	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.69	Pass
Internal Hysterysis	%	69 to 85	75.5	Pass
		Overall Test Results		Pass



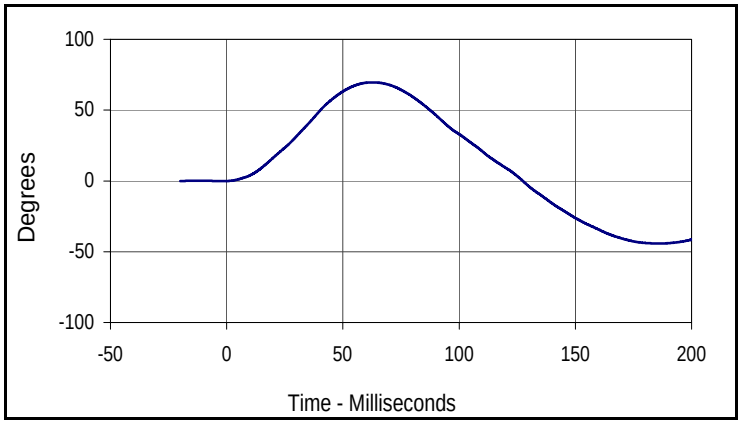
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysterysis
001	FIL	180	75.5
Peak Probe Force		Peak Chest Deflection	
5846		6.69	

Test Program:	Hybrid III 50th Percentile Male Neck Flexion Test	Test Date:	12/3/05
ATD Serial No.:	034	Test I.D.:	NF12A

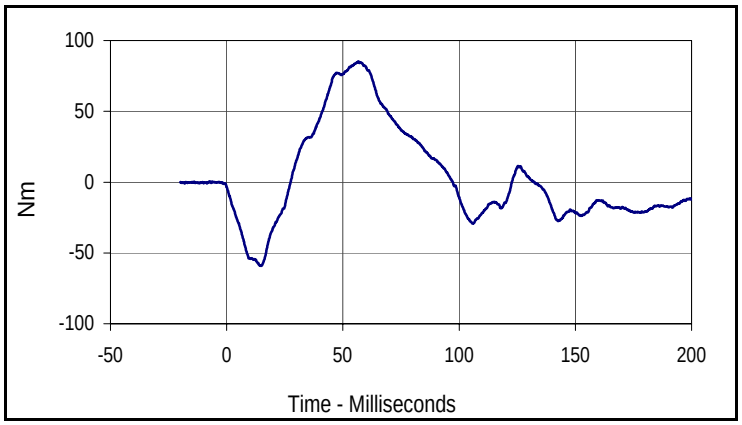
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.6	Pass
	20 Msec.	G's	17.6 to 22.6	20.2	Pass
	30 Msec.	G's	12.5 to 18.5	18.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	37.3	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	69.6	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	127.4	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	85.3	Pass
	Time	Msec.	47.0 to 58.0	56.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.3	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
22.7	8.9	-3.1	88.7



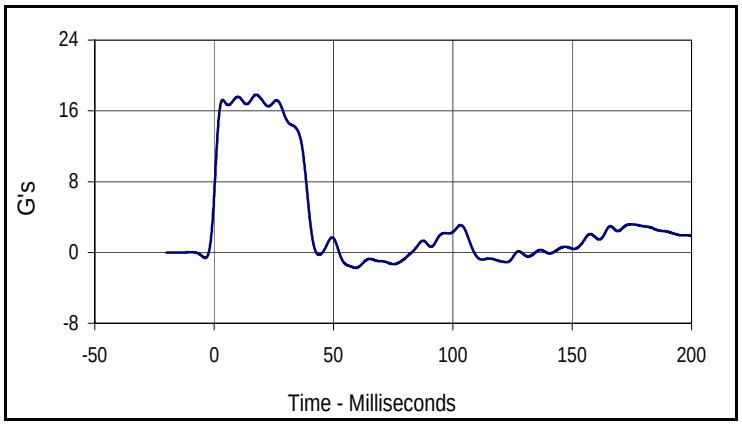
Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
69.6	62.7	-44.2	186.5



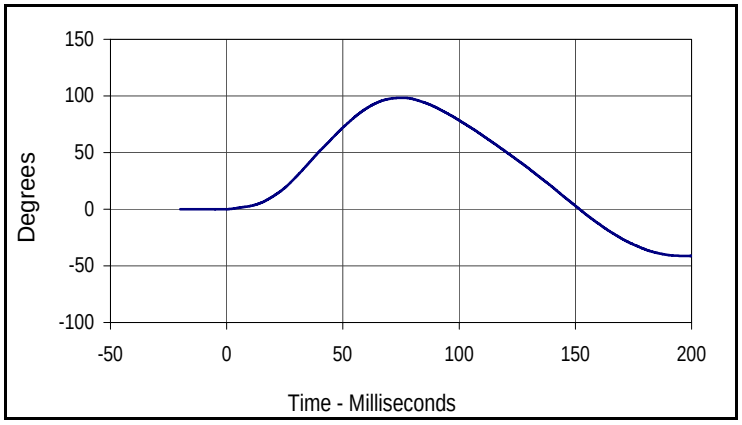
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
85.3	56.7	-59.1	14.9

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	12/3/05
ATD Serial No.:	034	Test I.D.:	NE12A

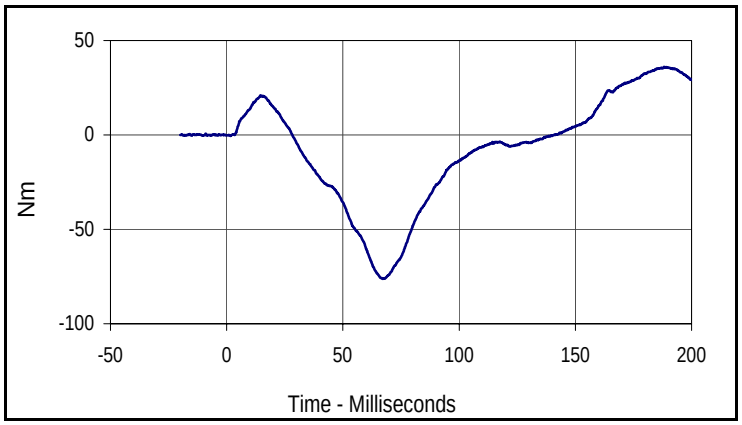
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.00	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.6	Pass
	20 Msec.	G's	14.0 to 19.0	17.3	Pass
	30 Msec.	G's	11.0 to 16.0	15.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	98.3	Pass
	Time	Msec.	72.0 to 82.0	75.6	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-76.2	Pass
	Time	Msec.	65.0 to 79.0	67.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.1	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.8	17.5	-1.7	59.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
98.3	75.6	-41.1	198.5



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
36.0	188.2	-76.2	67.2

Test Program:	Hybrid III 50th Percentile Male Knee Impact Test	Test Date:	12/3/05
ATD Serial No.:	034	Test I.D.:	LK12A , RK12A

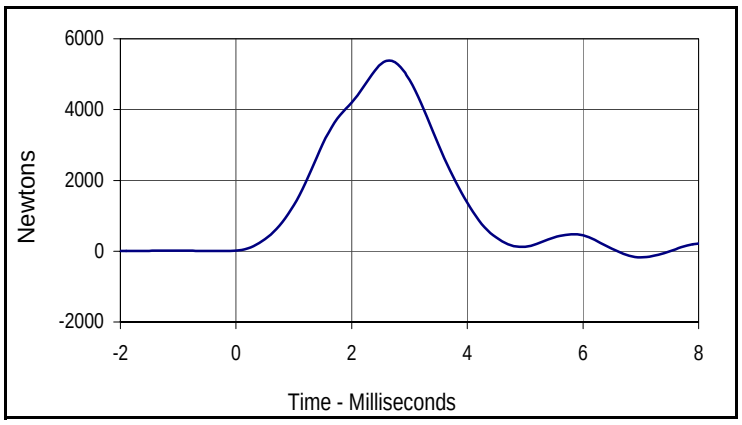
Left Knee

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	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5415	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	5376	Pass
		Overall Test Results		Pass

Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5415.3	2.7	-235.5	9.2



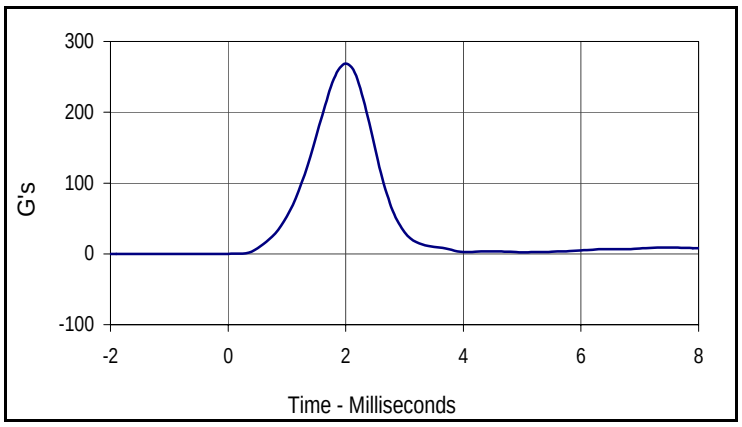
Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5376.3	2.7	-217.3	9.2

Test Program:	Hybrid III 50th Percentile Male External Measurements	Test Date:	12/4/05
ATD Serial No.:	034	Test I.D.:	N/A

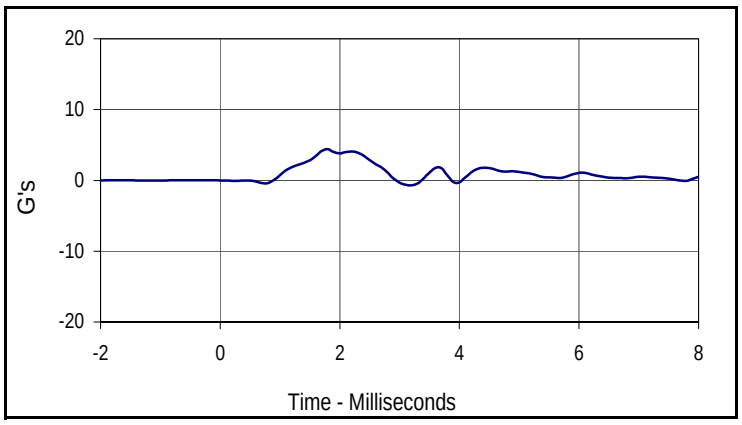
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	137	Pass
E - Shoulder pivot from back	mm	84 to 94	93	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	198	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Poplipteal length	mm	429 to 455	445	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock poplipteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	223	Pass
P - Foot length	mm	251 to 267	264	Pass
V - Shoulder breadth	mm	422 to 437	431	Pass
W - Foot breadth	mm	91 to 107	102	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	845	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	228	Pass
		Overall Test Results		Pass

Test Program:	Hybrid III 50th Percentile Male Head Drop Test	Test Date:	12/3/05
ATD Serial No.:	035	Test I.D.:	HD12B

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	268.9	Pass
Peak Lateral Acceleration	G's	≤15.0	4.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass



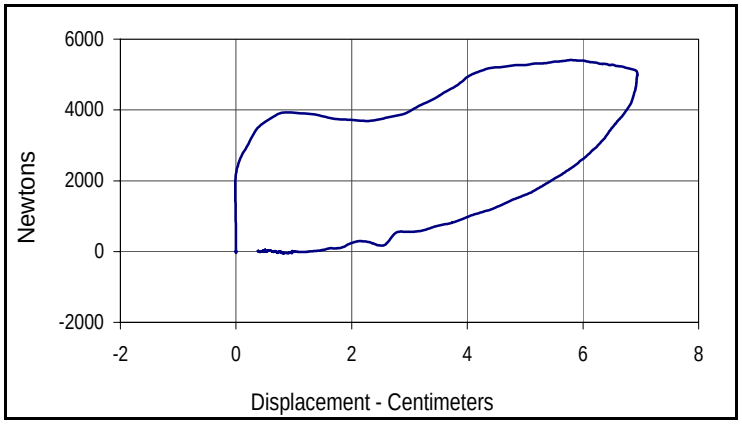
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
268.9	2.0	0.0	-0.1



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.4	1.8	-0.7	3.2

Test Program:	Hybrid III 50th Percentile Male Thorax Impact Test	Test Date:	12/4/05
ATD Serial No.:	035	Test I.D.:	CH01B

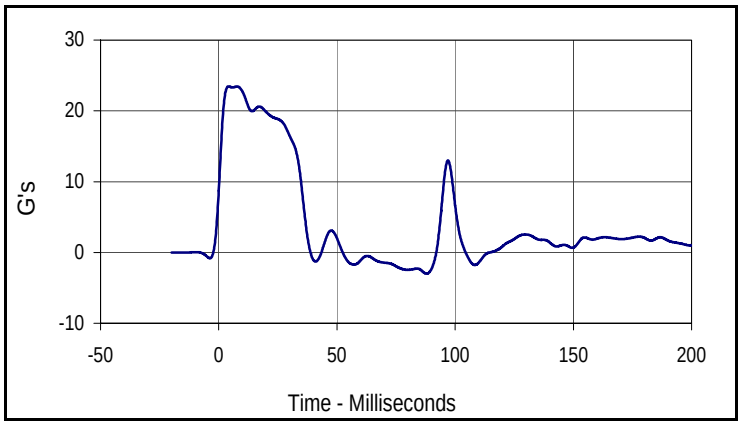
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5408	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.94	Pass
Internal Hysterysis	%	69 to 85	75.0	Pass
		Overall Test Results		Pass



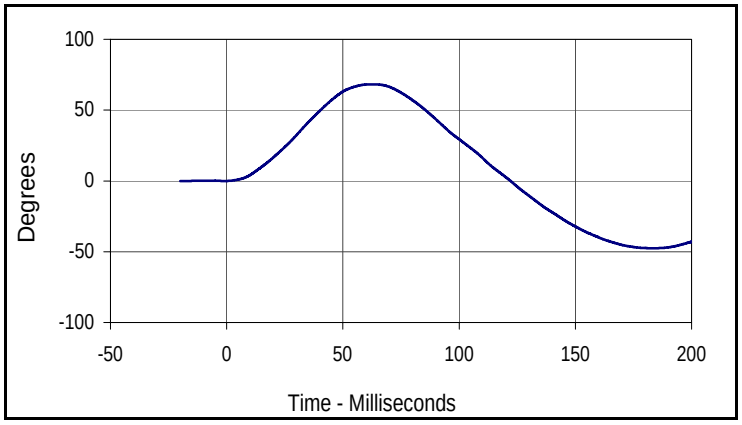
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysterysis
001	FIL	180	75.0
Peak Probe Force		Peak Chest Deflection	
5408		6.94	

Test Program:	Hybrid III 50th Percentile Male Neck Flexion Test	Test Date:	12/3/05
ATD Serial No.:	035	Test I.D.:	NF12B

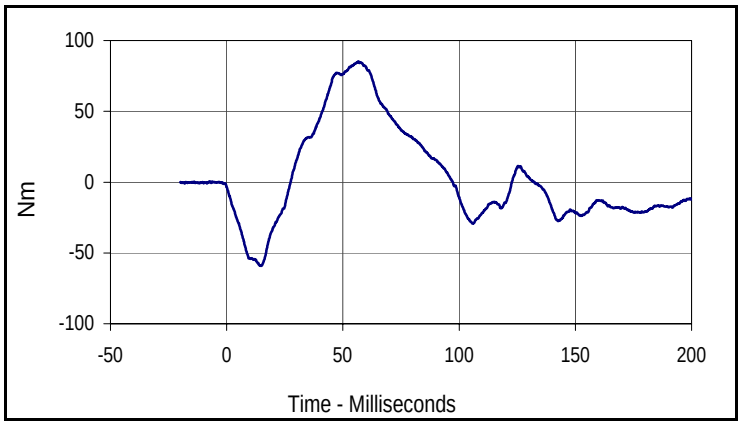
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	19.9	Pass
	30 Msec.	G's	12.5 to 18.5	16.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	16.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.5	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	68.2	Pass
	Time	Msec.	57.0 to 64.0	62.6	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	122.1	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	85.3	Pass
	Time	Msec.	47.0 to 58.0	56.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.3	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.5	7.7	-3.0	87.9



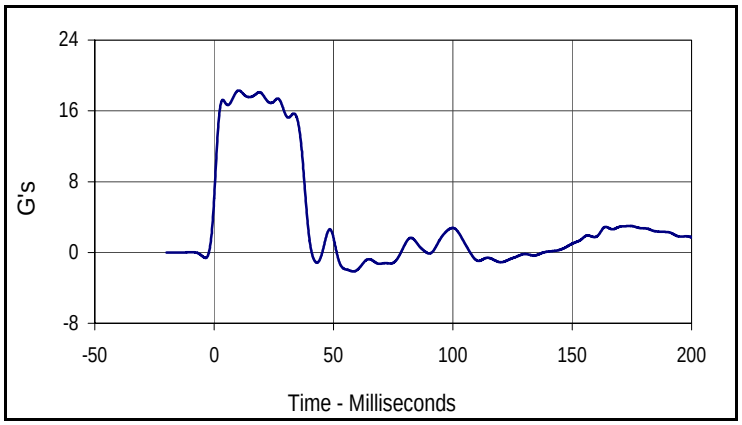
Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
68.2	62.6	-47.5	183.5



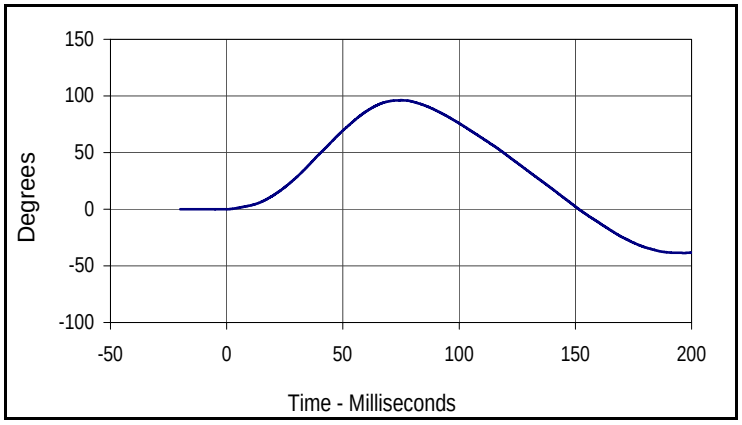
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
85.3	56.7	-59.1	14.9

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	12/3/05
ATD Serial No.:	035	Test I.D.:	NE12B

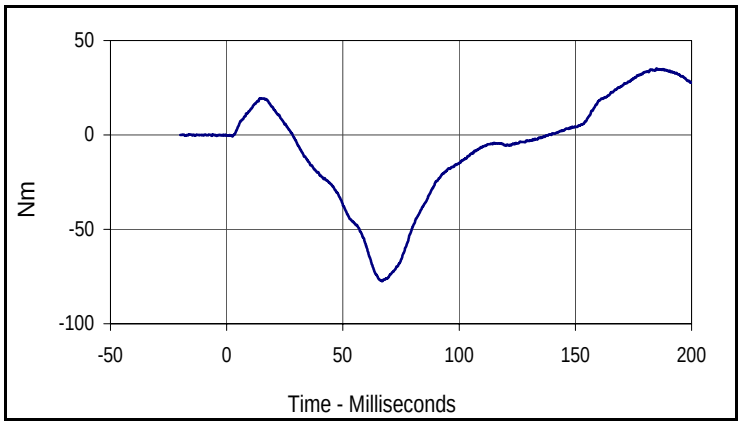
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.3	Pass
	20 Msec.	G's	14.0 to 19.0	18.0	Pass
	30 Msec.	G's	11.0 to 16.0	15.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	38.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	96.2	Pass
	Time	Msec.	72.0 to 82.0	75.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.6	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-77.4	Pass
	Time	Msec.	65.0 to 79.0	66.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	138.4	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.3	10.3	-2.1	58.4



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
96.2	75.1	-38.6	196.8



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
35.2	184.9	-77.4	66.9

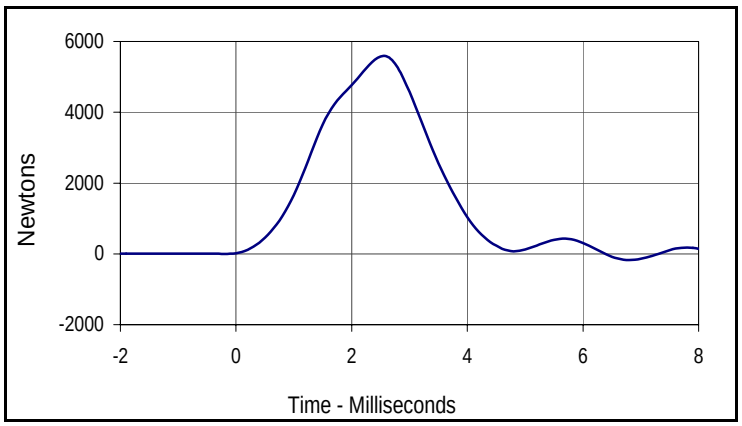
Test Program:	Hybrid III 50th Percentile Male Knee Impact Test	Test Date:	12/3/05
ATD Serial No.:	035	Test I.D.:	LK12B , RK12B

Left Knee

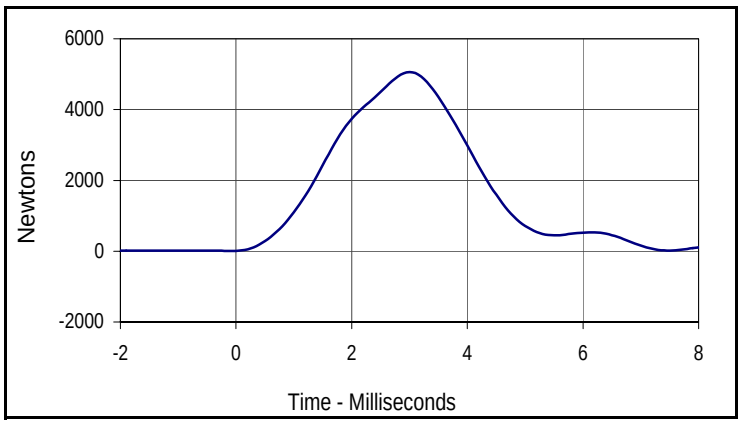
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5583	Pass
		Overall Test Results		Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5062	Pass
		Overall Test Results		Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5583.2	2.6	-214.5	8.9



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5061.5	3.0	-153.0	9.5

Test Program:	Hybrid III 50th Percentile Male External Measurements	Test Date:	12/4/05
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	885	Pass
B - Shoulder pivot height	mm	505 to 521	512	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	137	Pass
E - Shoulder pivot from back	mm	84 to 94	93	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	295	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Poplipteal length	mm	429 to 455	435	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock poplipteal length	mm	452 to 477	465	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	255	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	850	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